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SINCE our last catalogue, i. e., Catalogue G of 1905, was issued, we have added numerous products, as the succeeding pages will indicate.

With a line so varied, it is manifestly impossible to show all combinations of sizes and types, and while we strongly recommend the use of standard sizes and types, yet in case special material is necessary, your inquiries are solicited.

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All quotations are subject to change without notice.

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Our responsibility ceases when goods are delivered to carrier in good order and their receipt obtained.

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Requests for cancellation of orders calling for odd sizes or cut lengths of pipe will not be considered if the manufacture of the material has been commenced when the request reaches the mill.

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STANDARD
PIPE AND COUPLINGS
WROUGHT
FITTINGS
ETC.

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WROUGHT PIPE—STANDARD

For Steam, Gas and Water

Black and Galvanized

Adopted February 15, 1900

Nominal Size Inside Diameter, Inches	Price per Foot	Thickness Inches	Nominal Weight per Foot, Pounds	Number of Threads per Inch of Screw
⅛	.05½	.068	.24	27
¼	.05½	.088	.42	18
⅜	.05½	.091	.56	18
½	.08½	.109	.84	14
¾	.11½	.113	1.12	14
1	.16½	.134	1.67	11½
1¼	.22½	.140	2.24	11½
1½	.27	.145	2.68	11½
2	.36	.154	3.61	11½
2½	.57½	.204	5.74	8
3	.75½	.217	7.54	8
3½	.95	.226	9.00	8
4	1.08	.237	10.66	8
4½	1.30	.246	12.49	8
5	1.45	.259	14.50	8
6	1.88	.280	18.76	8
7	2.35	.301	23.27	8
8	2.82	.322	28.18	8
9	3.40	.344	33.70	8
10	4.25	.366	40.00	8
11	4.75	.375	45.00	8
12	5.20	.375	49.00	8

Unless otherwise ordered, black pipe, random lengths, with threads and couplings, will be shipped. For cut lengths, an extra charge will be made above random lengths.

For pipe smoothed on the inside, known as plugged and reamed, an extra charge will be made above regular pipe.

For galvanized pipe, an extra charge will be made above black.

For asphalted pipe, an extra charge will be made above black.

We are also prepared to furnish square and rectangular tubing in many different sizes, weights and thicknesses, cut to any desired length. This tubing is extensively used in agricultural implements and for mechanical, structural and architectural purposes. Prices and descriptive booklet will be furnished on application.

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WROUGHT PIPE—EXTRA STRONG

For Steam, Gas and Water

Size Inches	Price per Foot	Actual Outside Diameter Inches	Nominal Inside Diameter Inches	Thickness Inches	Nominal Weight per Foot Pounds
⅛	.11	.405	.205	.100	.29
¼	.11	.540	.294	.123	.54
⅜	.11	.675	.421	.127	.74
½	.12	.840	.542	.149	1.09
¾	.15	1.05	.736	.157	1.39
1	.22	1.315	.951	.182	2.17
1¼	.30	1.66	1.272	.194	3.00
1½	.36	1.900	1.494	.203	3.63
2	.50	2.375	1.933	.221	5.02
2½	.81	2.875	2.315	.280	7.67
3	1.05	3.500	2.892	.304	10.25
3½	1.33	4.000	3.358	.321	12.47
4	1.50	4.500	3.818	.341	14.97
4½	1.95	5.000	4.280	.360	18.22
5	2.16	5.563	4.813	.375	20.54
6	2.90	6.625	5.750	.437	28.58
7	3.80	7.625	6.625	.500	37.67
8	4.30	8.625	7.625	.500	43.00

Double Extra Strong

Size Inches	Price per Foot	Actual Outside Diameter Inches	Nominal Inside Diameter Inches	Thickness Inches	Nominal Weight per Foot Pounds
½	.25	.84	.244	.298	1.70
¾	.30	1.05	.422	.314	2.44
1	.37	1.315	.587	.364	3.65
1¼	.52	1.66	.885	.388	5.20
1½	.65	1.90	1.088	.406	6.40
2	.95	2.375	1.491	.442	9.02
2½	1.37	2.875	1.755	.560	13.68
3	1.92	3.50	2.284	.608	18.56
3½	2.45	4.00	2.716	.642	22.75
4	2.85	4.50	3.136	.682	27.48
4½	3.30	5.00	3.564	.718	32.53
5	3.80	5.563	4.063	.75	38.12
6	5.30	6.625	4.875	.875	53.11
7	6.25	7.625	5.875	.875	62.38
8	7.20	8.625	6.875	.875	71.62

Extra strong and double extra strong will be shipped in random lengths and plain ends, unless otherwise ordered.

Random length extra strong pipe is considered to be 12 feet to 20 feet, we to have the privilege, however, of supplying not exceeding 10% of total order in lengths from 6 feet to 12 feet.

For pipe fitted with threads and couplings an extra charge will be made above regular.

For cut lengths an extra charge will be made above random.

For galvanized or asphalted an extra charge will be made above black.

Extra heavy or hydraulic pipe away from standard—special prices given on application.

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STANDARD WROUGHT COUPLINGS

For Steam, Gas and Water Pipe

Fig. H-1

Fig. H-2

Size.....inches	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Black, Fig. H-1 .....each	.05	.05	.06	.07	.10	.13	.17	.21	.28
Galvanized ..... "	.06	.06	.08	.10	.13	.18	.25	.32	.40
R. & L., Blk., No. H-3 "	.07	.07	.08	.11	.15	.20	.25	.30	.50
R. & L., Galv ..... "	.08	.08	.10	.14	.18	.23	.33	.41	.62

Size .....inches	2 1/2	3	3 1/2	4	4 1/2	5	6	7	8
Black, Fig. H-1.....each	.40	.60	.80	1.00	1.50	1.65	2.40	3.25	4.25
Galvanized ..... "	.55	.80	1.05	1.40	2.00	2.25	3.25	4.20	5.50
R. & L., Blk., No. H-3 "	.85	1.20	1.60	2.00	8.20	9.00	12.50	13.00	17.00
R. & L., Galv ..... "	1.00	1.40	1.90	2.40	8.75	9.65	13.35	13.95	18.25

Size .....inches	9	10	11	12	13	14	15	....	....
Black, Fig. H 1.....each	5.50	7.50	10.00	10.00	12.50	18.75	25.00	....	....
Galvanized ..... "	7.00	9.75	12.85	13.65	16.50	23.85	30.25	....	....
R. & L., Blk., No. H-3 "	17.50	23.00	24.25	28.00	....	....	....	....	....
R. & L., Galv ..... "	19.00	25.25	27.10	31.65	....	....	....	....	....

We manufacture many other styles of couplings for special uses.

We invite correspondence in case customers do not find, illustrated herein, couplings suitable for their purposes.

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PATENT
SLEEVE TUBING COUPLINGS

Fig. H-4

Fig. H-5

Size .....inches	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Black Fig. H-5....each	.10	.10	.10	.12	.15	.25	.30	.40
Galvanized ..... "	.14	.14	.14	.16	.21	.37	.46	.57
R.&L. Black No. H-6 "	.15	.15	.15	.18	.23	.38	.45	.70
R. & L., Galv..... "	.21	.21	.21	.25	.31	.53	.63	.98
Size .....inches	2 1/2	3	3 1/2	4	4 1/2	5	6	7
Black Fig. H-5 ....each	.60	.80	1.30	1.50	2.00	2.40	2.80	3.85
Galvanized..... "	.85	1.15	1.90	2.15	2.85	3.45	4.00	5.55
R.&L. Black No. H-6 "	1.20	1.60	2.60	3.00	7.75	8.50	9.75	10.00
R. & L., Galv..... "	1.70	2.25	3.65	4.20	9.15	10.50	12.00	12.75
Size .....inches	8	9	10	11	12	13	14	15
Black Fig. H-5....each	4.00	5.00	6.00	8.00	8.00	10.00	13.00	20.00
Galvanized ..... "	5.80	7.25	8.75	10.75	11.15	13.75	17.75	25.00
R.&L. Black No. H-6 "	11.50	12.00	14.75	16.75	18.25	.....	.....	.....
R. & L., Galv..... "	15.75	16.75	20.25	23.20	25.50	.....	.....	.....

We manufacture many other styles of couplings for special uses.

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EXTRA HEAVY COUPLINGS

Fig. H-7

Fig. H-8

Size.....inches	½	¾	1	1¼	1½	2	2½	3
Black, Fig. H-8...each	.14	.20	.26	.34	.42	.56	.80	1.20
Galvanized..... "	.20	.26	.36	.50	.64	.80	1.10	1.60
R. & L., Black, No. H-9... "	.18	.25	.33	.42	.51	.78	1.25	1.80

DRILL ROD COUPLINGS

Fig. H-10

Size.....inches	1	1	1¼	1½
Length .....inches	3	3½	3¼	3¼
O. D..... "	1¾	1 21/32	2 5/16	2 7/16
Black.....each	.40	.50	.60	.75

We manufacture many other styles of couplings for special uses.

We invite correspondence in case customers do not find illustrated herein couplings suitable for their purposes.

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CAR HEATER COUPLINGS

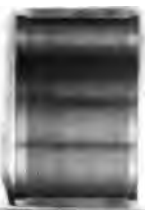
Fig. H-11
Coupling. Cast-Iron

Fig. H-12
Coupling. Wrought

Size .....inches	½	¾	1	1¼	1½	2
Right Hand, Fig. H-11.....each	.....	.....	.25	.30	.45	.55
Right and Left, Fig. H-11 ..... "	.....	.....	.35	.40	.55	.65
Right Hand, Fig. H-12 ..... "	.14	.20	.26	.34	.42	.56
Right and Left, Fig. H-12..... "	.20	.30	.40	.45	.55	.70
Right Hand, Galvanized, Fig. H 12..... "	.20	.25	.32	.42	.55	.75
Right and Left, Galvanized, Fig. H-12.... "	.25	.35	.45	.55	.70	.90

CASING COUPLINGS

Fig. H-13



Size .....inches	1½	1¾	2	2¼	2½	2¾	3	3¼	3½	3¾
Black, Fig. H-13 ...each	.12	.....	.16	.20	.25	.30	.35	.40	.46	.52
Galvanized ..... "	.18	.....	.23	.28	.35	.42	.50	.57	.65	.73
Black, R. & L., No. H-14... "	1.35	1.35	1.70	1.80	2.00	2.10	2.50	2.60	3.00	3.10
Size.....inches	4	4¼	4½	4¾	5	5 5/16	5⅝	6¼	6⅝	7¼
Black, Fig. H-13 ...each	.60	.68	.74	.80	.90	1.00	1.20	1.35	1.50	1.65
Galvanized ..... "	.85	1.00	1.05	1.15	1.30	1.40	1.70	1.90	2.15	2.35
Black, R. & L., No. H-14... "	3.70	3.95	4.55	4.85	5.25	5.50	6.10	6.45	7.10	7.55
Size .....inches	7⅝	8¼	8⅝	9⅝	10⅝	11⅝	12½	13½	14½	15½
Black, Fig. H-13 ...each	1.75	2.25	2.85	3.50	4.50	5.15	6.75	7.60	8.75	10.00
Galvanized ..... "	2.50	3.25	3.75	5.00	6.15	6.95	8.85	10.15	11.75	13.15
Black, R. & L., No. H-14... "	8.30	9.30	10.25	11.80	13.25	14.25	16.80	18.65	21.00	22.25

We manufacture many other styles of couplings for special uses.
We invite correspondence in case customers do not find illustrated herein, couplings for their purpose.
Note.— Size shown indicates nominal inside diameter of casing, and coupling will be so furnished unless otherwise specified.

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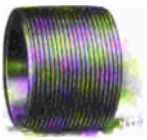
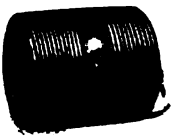
Fig. H-15



Close

WROUGHT NIPPLES

Fig. H-16



Shoulder

Threaded Right Hand

Length, Inches						Prices		Prices of Extra Long Nipples								
								Length, Inches								
Close	Short	Long			Sizes	Close or Short	Long	4	5	6	7	8	9	10	11	12
¾	1½	2	2½	3	3½	⅛	.04	.06	.07	.08	.10	.12	.14	.15	.17	.18	.19
⅞	1½	2	2½	3	3½	¼	.04	.06	.07	.08	.10	.12	.14	.15	.17	.18	.19
1	1½	2	2½	3	3½	⅜	.04	.06	.07	.08	.10	.12	.14	.15	.17	.18	.19
1⅛	1½	2	2½	3	3½	½	.05	.07	.08	.10	.12	.14	.16	.18	.20	.22	.23
1⅜	2	2½	3	3½	4	¾	.06	.09	...	.11	.13	.17	.18	.20	.22	.24	.26
1½	2	2½	3	3½	4	1	.08	.13	...	.15	.18	.23	.25	.28	.31	.34	.36
1⅝	2½	3	3½	4	4½	1¼	.11	.17	...	.20	.24	.29	.33	.36	.40	.44	.47
1¾	2½	3	3½	4	4½	1½	.13	.20	...	.25	.29	.36	.40	.45	.50	.54	.59
2	2½	3	3½	4	4½	2	.18	.27	...	.32	.38	.50	.54	.59	.65	.72	.77
2½	3	3½	4	4½	5	2½	.39	.59	...	...	.68	.90	.97	1.06	1.17	1.26	1.35
2½	3	3½	4	4½	5	3	.48	.72	...	...	.85	1.08	1.20	1.33	1.45	1.58	1.70
2¾	4	4½	5	5½	6	3½	.75	1.05	...	...	...	1.30	1.45	1.60	1.75	1.90	2.05
3	4	4½	5	5½	6	4	.85	1.20	...	...	...	1.52	1.69	1.87	2.05	2.22	2.40
3	4	4½	5	5½	6	4½	1.25	1.70	...	...	...	2.25	2.50	2.75	2.95	3.17	3.40
3½	4½	5	5½	6	6½	5	1.55	2.45	...	...	...	2.58	2.83	3.10	3.35	3.60	3.85
3½	4½	5	5½	6	6½	6	1.85	2.90	...	...	...	3.05	3.35	3.70	4.00	4.30	4.65
4	5	6	...	...	...	7	3.20	3.60	...	...	...	4.05	4.45	4.90	5.30	5.75	6.15
4	5	6	...	...	...	8	3.55	4.05	...	...	...	4.55	5.05	5.50	6.00	6.50	7.00
5	6	8	...	...	...	9	5.25	6.50	...	...	...	....	....	7.10	7.75	8.40	9.00
5	6	8	...	...	...	10	6.75	8.25	...	...	...	....	....	8.90	9.70	10.40	11.15
...	...	...	...	...	...	11	.....	.....	...	...	...	....	....	.....	.....	.....	.....
5	6	8	...	...	...	12	8.00	10.00	...	...	...	....	...	10.80	11.75	12.70	13.65

Prices of Extra Long Nipples—Continued, Right Hand

Size Inches	Length, Inches											
	13	14	15	16	17	18	19	20	21	22	23	24
⅛	.22	.24	.26	.28	.29	.30	.32	.34	.35	.36	.37	.38
¼	.22	.24	.26	.28	.29	.30	.32	.34	.35	.36	.37	.38
⅜	.22	.24	.26	.28	.29	.30	.32	.34	.35	.36	.37	.38
½	.26	.28	.30	.32	.34	.36	.38	.40	.42	.44	.45	.46
¾	.30	.34	.35	.36	.38	.40	.42	.44	.46	.48	.50	.52
1	.41	.46	.48	.50	.53	.56	.59	.62	.65	.68	.70	.72
1¼	.53	.58	.62	.66	.69	.72	.76	.80	.84	.88	.91	.94
1½	.65	.72	.76	.80	.85	.90	.95	1.00	1.04	1.08	1.13	1.18
2	.88	1.00	1.04	1.08	1.13	1.18	1.24	1.30	1.37	1.44	1.49	1.54
2½	1.58	1.80	1.87	1.94	2.03	2.12	2.23	2.34	2.43	2.52	2.61	2.70
3	1.93	2.16	2.28	2.40	2.53	2.66	2.78	2.90	3.03	3.16	3.28	3.40

Nipples larger than 3 inches and longer than 12 inches, prices on application.
Assorted close and short nipples will always be sent unless otherwise ordered.
Nipples made to order from extra heavy pipe, at double above list.
We can furnish 2½ inch and 3 inch nipples with 11½ threads per inch, at special prices.

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WROUGHT NIPPLES

Threaded Right and Left

Length, Inches						Sizes	Prices		Prices of Extra Long R. and L. Nipples								
									Lengths, Inches								
Close	Short	Long					Close or Short	Long	4	5	6	7	8	9	10	11	12
3/4	1 1/2	2	2 1/2	3	3 1/2	1/8	.05	.08	.09	.11	.13	.16	.18	.20	.23	.25	.27
7/8	1 1/2	2	2 1/2	3	3 1/2	1/4	.05	.08	.09	.11	.13	.16	.18	.20	.23	.25	.27
1	1 1/2	2	2 1/2	3	3 1/2	3/8	.05	.08	.09	.11	.13	.16	.18	.20	.23	.25	.27
1 1/8	1 1/2	2	2 1/2	3	3 1/2	1/2	.07	.10	.11	.13	.16	.18	.21	.24	.27	.29	.31
1 3/8	2	2 1/2	3	3 1/2	4	3/4	.08	.12	....	.15	.17	.23	.25	.27	.29	.32	.35
1 1/2	2	2 1/2	3	3 1/2	4	1	.11	.18	....	.20	.24	.31	.33	.37	.41	.45	.48
1 5/8	2 1/2	3	3 1/2	4	4 1/2	1 1/4	.15	.23	....	.27	.32	.39	.45	.50	.55	.60	.65
1 3/4	2 1/2	3	3 1/2	4	4 1/2	1 1/2	.18	.27	....	.34	.39	.48	.52	.60	.67	.72	.80
2	2 1/2	3	3 1/2	4	4 1/2	2	.24	.36	....	.43	.51	.67	.72	.80	.87	.96	1.03
2 1/2	3	3 1/2	4	4 1/2	5	2 1/2	.52	.79	....	....	.91	1.20	1.30	1.40	1.55	1.68	1.80
2 1/2	3	3 1/2	4	4 1/2	5	3	.65	.96	....	....	1.13	1.44	1.60	1.77	1.93	2.10	2.27
2 3/4	4	4 1/2	5	5 1/2	6	3 1/2	1.00	1.40	....	....	....	1.75	1.95	2.15	2.35	2.55	2.75
3	4	4 1/2	5	5 1/2	6	4	1.15	1.60	....	....	....	2.00	2.25	2.50	2.75	3.00	3.25

Size Inches	Prices of Extra Long R. and L. Nipples—Continued											
	Length, Inches											
	13	14	15	16	17	18	19	20	21	22	23	24
1/8	.29	.32	.34	.36	.38	.40	.43	.46	.48	.50	.52	.54
1/4	.29	.32	.34	.36	.38	.40	.43	.46	.48	.50	.52	.54
3/8	.29	.32	.34	.36	.38	.40	.43	.46	.48	.50	.52	.54
1/2	.34	.36	.39	.42	.45	.48	.51	.54	.56	.58	.60	.62
3/4	.40	.46	.48	.50	.52	.54	.56	.58	.61	.64	.67	.70
1	.55	.62	.64	.66	.70	.74	.78	.82	.86	.90	.93	.96
1 1/4	.71	.78	.84	.90	.95	1.00	1.05	1.10	1.15	1.20	1.25	1.30
1 1/2	.87	.96	1.00	1.04	1.12	1.20	1.27	1.34	1.39	1.44	1.52	1.60
2	1.18	1.34	1.39	1.44	1.52	1.60	1.67	1.74	1.83	1.92	1.99	2.06
2 1/2	2.11	2.40	2.50	2.60	2.70	2.80	2.95	3.10	3.23	3.36	3.48	3.60
3	2.57	2.88	3.04	3.20	3.37	3.54	3.70	3.86	4.03	4.20	4.37	4.54

Nipples larger than 3 inches and longer than 12 inches, prices on application.

Add 60 per cent to above prices for galvanized nipples threaded right and left.

Assorted right and left nipples will be furnished long unless otherwise specified.

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WROUGHT NIPPLES—GALVANIZED

Threaded Right Hand

Length, Inches					Sizes	Prices		Prices of Extra Long Galvanized Nipples								
								Length, Inches								
Close	Short	Long				Close or Short	Long	4	5	6	7	8	9	10	11	12
3/4	1 1/2	2	2 1/2	3	3 1/2	1/8	.06	.11	.12	.15	.17	.21	.24	.26	.29	.31	.34
7/8	1 1/2	2	2 1/2	3	3 1/2	1/4	.06	.11	.12	.15	.17	.21	.24	.26	.29	.31	.34
1	1 1/2	2	2 1/2	3	3 1/2	3/8	.06	.11	.12	.15	.17	.21	.24	.26	.29	.31	.34
1 1/8	1 1/2	2	2 1/2	3	3 1/2	1/2	.06	.11	.13	.16	.18	.23	.26	.28	.31	.33	.36
1 3/8	2	2 1/2	3	3 1/2	4	3/4	.08	.14	...	.18	.21	.26	.29	.32	.35	.38	.41
1 1/2	2	2 1/2	3	3 1/2	4	1	.11	.19	...	.24	.28	.34	.38	.42	.47	.51	.55
1 5/8	2 1/2	3	3 1/2	4	4 1/2	1 1/4	.17	.29	...	.32	.38	.45	.51	.57	.63	.69	.75
1 3/4	2 1/2	3	3 1/2	4	4 1/2	1 1/2	.21	.35	...	.39	.46	.55	.63	.70	.77	.84	.91
2	2 1/2	3	3 1/2	4	4 1/2	2	.27	.47	...	.52	.61	.74	.83	.93	1.03	1.13	1.23
2 1/2	3	3 1/2	4	4 1/2	5	2 1/2	.56	.86	...	...	1.00	1.26	1.41	1.56	1.71	1.86	2.01
2 1/2	3	3 1/2	4	4 1/2	5	3	.70	1.10	...	...	1.30	1.60	1.80	2.00	2.20	2.40	2.60
2 3/4	4	4 1/2	5	5 1/2	6	3 1/2	1.20	1.70	...	...	....	2.10	2.35	2.60	2.85	3.15	3.40
3	4	4 1/2	5	5 1/2	6	4	1.35	1.87	...	...	....	2.30	2.60	2.90	3.20	3.50	3.80
3	4	4 1/2	5	5 1/2	6	4 1/2	1.85	2.60	...	...	....	3.30	3.65	4.05	4.45	4.85	5.25
3 1/2	4 1/2	5	5 1/2	6	6 1/2	5	2.30	3.15	...	...	....	3.75	4.20	4.60	5.00	5.40	5.85
3 1/2	4 1/2	5	5 1/2	6	6 1/2	6	2.80	4.25	...	...	....	4.50	5.00	5.55	6.05	6.60	7.15
4	5	6	...	...	...	7	4.25	4.95	...	...	....	5.65	6.35	7.05	7.75	8.45	9.20
4	5	6	...	...	...	8	5.00	5.80	...	...	....	6.65	7.50	8.35	9.25	10.10	10.95

Prices of Extra Long Galvanized Nipples — Continued

Size Inches	Length, Inches											
	13	14	15	16	17	18	19	20	21	22	23	24
1/8	.38	.42	.45	.48	.50	.52	.55	.58	.60	.62	.65	.68
1/4	.38	.42	.45	.48	.50	.52	.55	.58	.60	.62	.65	.68
3/8	.38	.42	.45	.48	.50	.52	.55	.58	.60	.62	.65	.68
1/2	.41	.46	.49	.52	.54	.56	.59	.62	.64	.66	.69	.72
3/4	.47	.52	.55	.58	.61	.64	.67	.70	.73	.76	.79	.82
1	.62	.68	.72	.76	.80	.84	.89	.94	.98	1.02	1.06	1.10
1 1/4	.83	.90	.96	1.02	1.08	1.14	1.20	1.26	1.32	1.38	1.44	1.50
1 1/2	1.01	1.10	1.18	1.26	1.33	1.40	1.47	1.54	1.61	1.68	1.75	1.82
2	1.35	1.48	1.57	1.66	1.76	1.86	1.96	2.06	2.16	2.26	2.36	2.46
2 1/2	2.26	2.52	2.67	2.82	2.97	3.12	3.27	3.42	3.57	3.72	3.87	4.02
3	2.90	3.20	3.40	3.60	3.80	4.00	4.20	4.40	4.60	4.80	5.00	5.20

Nipples larger than 3 inch and longer than 12 inch prices on application.

Assorted close and short galvanized nipples will always be furnished unless otherwise specified.

To obtain lists on extra heavy galvanized nipples take the difference between the black and galvanized list and add double the black list.

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WROUGHT FITTINGS

CASING NIPPLES

Fig H-17

Size .....inches	3	3¼	3½	3¾	4	4¼	4½	4¾	5
Close or Short, Fig. H-17. each	1.90	1.95	2.30	2.35	2.35	2.40	2.40	2.45	2.55
Long..... "	2.00	2.10	2.45	2.50	2.50	2.60	2.60	2.70	2.85
6 inches long..... "	2.05	....	....	....	....	....	....	....	....
7 inches long..... "	2.10	2.15	2.50	2.60	2.60	2.70	2.70	2.80	2.95
8 inches long ..... "	2.15	2.20	2.60	2.65	2.75	2.80	2.80	2.95	3.10
9 inches long..... "	2.25	2.30	2.65	2.75	2.80	2.90	2.90	3.05	3.25
10 inches long..... "	2.30	2.35	2.70	2.85	2.90	3.00	3.00	3.15	3.40
11 inches long..... "	2.35	2.40	2.80	2.90	3.00	3.05	3.10	3.25	3.55
12 inches long..... "	2.40	2.50	2.85	3.00	3.10	3.15	3.20	3.35	3.65

Size .....inches	5⅜	5⅝	6¼	6⅝	7⅝	8¼	8⅝	9⅝	10⅝
Close or Short Fig. H-17. each	3.00	3.25	3.45	4.50	4.50	5.25	6.45	7.10	....
Long..... "	3.30	3.50	....	....	....	....	....	....	....
6 inches long..... "	....	....	3.80	4.80	4.75	5.45	....	....	....
7 inches long..... "	3.50	3.65	4.00	5.05	5.00	5.70	6.70	7.45	8.15
8 inches long..... "	3.65	3.80	4.20	5.30	5.25	5.95	7.00	7.80	8.60
9 inches long..... "	3.80	3.95	4.35	5.55	5.45	6.20	7.30	8.15	8.95
10 inches long..... "	4.00	4.10	4.55	5.80	5.70	6.45	7.60	8.50	9.50
11 inches long..... "	4.15	4.25	4.75	6.05	5.95	6.70	7.90	8.85	9.85
12 inches long..... "	4.30	4.40	4.95	6.30	6.20	6.95	8.20	9.20	10.20

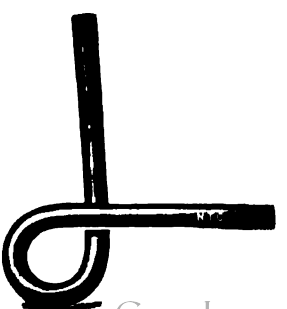
Casing nipples over twelve inches long, charge net price of casing and two threads.

STEAM GAUGE SYPHONS

Fig. H-18
Vertical

Size of Pipe.....inches	¼
Price.....each	.50

Fig. H-19
Angle



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WROUGHT FITTINGS

LONG SCREWS

Made from Extra Heavy Pipe

With Coupling and Follower Faced

Fig. H-20

Size....inches	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4
Standard Length, ins.	2½	3	3½	4	4½	5	5½	6	7	8	8½	9
Black....each	.30	.35	.40	.55	.75	1.00	1.30	1.70	2.70	3.70	5.40	6.60
Galvanized "	.35	.40	.50	.66	1.00	1.25	1.60	2.10	3.10	4.70	6.75	8.25

Long screws are furnished with malleable ribbed couplings and followers unless specified otherwise, except 2½ and larger which will be wrought.

LOCK-NUT OR TANK NIPPLES

Fig. H-21

List same as for standard nipples. These nipples up to 2 inches inclusive, always furnished 6 inches long unless otherwise specified. The length on 2½ and larger must be specified.

STANDARD THREADS FOR PIPE

Size .....inches	⅛	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Each.....	.05	.05	.05	.05	.05	.06	.07	.08	.10	.15	.20
Size.....inches	3½	4	4½	5	6	7	8	9	10	12	....
Each.....	.25	.35	.45	.55	.70	.85	1.00	1.25	1.50	2.50	....

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WROUGHT FITTINGS

LONG SCREW COUPLINGS AND FOLLOWERS

FACED — WROUGHT

Fig. H-22
Follower

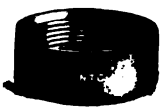

Fig. H-23
Coupling

Size.....inches	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4
Couplings, Fig. H-23...each	.13	.13	.14	.18	.22	.28	.32	.41	.65	.90	1.20	1.60
Followers, Fig. H-22... "	.11	.11	.12	.14	.19	.24	.23	.27	.45	.65	.90	1.20
Couplings, Galvanized "	.17	.17	.19	.24	.30	.42	.43	.60	.95	1.30	1.90	2.50
Followers " "	.14	.14	.15	.19	.26	.36	.34	.40	.65	.95	1.50	1.80

FACED — MALLEABLE IRON

Fig. H-24
Follower

Fig. H-25
Coupling

Size.....inches	¼	⅜	½	¾	1	1¼	1½	2
Couplings, Fig. H-25.....each	.09	.09	.10	.11	.14	.21	.26	.34
Followers, Fig. H-24..... "	.06	.06	.06	.07	.10	.14	.17	.23
Couplings, Galvanized ..... "	.11	.11	.13	.16	.21	.32	.37	.50
Followers " ..... "	.07	.07	.08	.11	.14	.21	.25	.33

Long Screw Couplings and Followers to 2 inch inclusive are always furnished malleable, unless otherwise specified, 2½ inch and larger are always wrought.

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DRIVE WELL POINTS AND WELL SUPPLIES

The following pages show our lines of Drive Well Points and Well Supplies. Our facilities for producing articles of superior quality represent the development of years of practical experience in this line.

We call attention to some of the noteworthy points of superiority which we claim for our Well Points.

1. All Brass Jacket, Flush, Washer, and Single Screen Well Points are made from new, first-class, thoroughly galvanized, wrought pipe with a drive plug carefully fitted so as to exclude sand and dirt, and then riveted. All Open Center Banner and Scott Perfection Well Points are made in one piece from the best quality malleable iron, carefully annealed and thoroughly galvanized.

2. It is our practice to galvanize the skeleton point after the holes have been punched, thus coating the sides of the holes through which the water enters as well as the outside and inside of the pipe.

3. It is our practice to punch the holes in line vertically. This arrangement leaves an unbroken surface between the holes extending the full length of the jacket and permits of the gauze and jacket being firmly soldered to the skeleton. When the holes are punched out of line a full contact is practically impossible and the gauze and jacket are liable to strip while being driven. The filtering surface is also decreased in proportion to the number of holes filled with solder.

4. In driving there is a very great tendency to strip the jacket and gauze, due to the friction of the clay or other strata encountered, hence great care is taken to see that the jacket and gauze are firmly soldered to the skeleton point.

5. All skeleton points are thoroughly galvanized, which process is generally conceded to be the most effective anti-rust treatment.

6. All Well Points of our manufacture when completed are immediately wrapped in paper, the threads well oiled, and in case of Wrought Points the plugs coated with rust-proof paint. This keeps the brass bright and clean and the threads and plugs in good condition.

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OPEN CENTER BANNER POINTS

(Skeleton)

Fig. H-26

(With Jacket)

Fig. H-27

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OPEN CENTER BANNER POINTS

These points are made of the best grade of Malleable Iron and are heavily galvanized, not only on the outside and inside, but also on the edges of the inlet openings.

Painstaking design has secured the largest possible filtering surface consistent with sufficient strength to withstand driving, thus affording a free inlet for water.

Price List

Trade Number	Size in Diame'r Inches	Length of Point, Inches	Length of Jacket, Inches	Number of Gauze 60, Price per Dozen	Number of Gauze 70, Price per Dozen	Number of Gauze 80, Price per Dozen	Number of Gauze 90, Price per Dozen	Number of Gauze 100, Price per Dozen
186	1¼	20	14	30.00	36.00	42.00	50.00	64.00
190	1¼	24	18	36.00	44.00	52.00	60.00	80.00
194	1¼	30	24	46.00	55.00	64.00	75.00	100.00
198	1¼	36	30	56.00	66.00	76.00	90.00	120.00
336	1½	24	18	48.00	57.00	65.00	78.00	94.00
340	1½	30	24	60.00	70.00	80.00	96.00	118.00
344	1½	36	30	72.00	84.00	95.00	114.00	142.00
360	2	24	18	75.00	85.00	94.00	110.00	130.00
364	2	30	24	90.00	101.00	112.00	132.00	160.00
368	2	36	30	105.00	118.00	130.00	154.00	190.00

Please order by trade number and state mesh of gauze.

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PERFECTION POINTS

(Skeleton)

Fig. H-28

(With Jacket)

Fig. H-29

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SCOTT PERFECTION DRIVE WELL POINTS

These points are made from best grade of Malleable Iron in one piece with metal evenly distributed, insuring perfect annealing, and thus the greatest strength.

They are heavily galvanized and special care is taken to see that the edges of the holes are thoroughly coated.

The unusually large area of water opening in Perfection Points is a noteworthy feature. They have practically double the filtering surface of the best points made from wrought pipe.

We particularly recommend this point to those who have encountered difficulty in securing an adequate supply of water with other points.

Perfection points have the gauze and jacket soldered to the skeleton with two seams, one on each side of the point, thus making them superior for hard driving.

Price List

Trade No.	Inside Diameter Inches	Length of Point Inches	Length of Jacket Inches	Aggregate Number of Square Inches Openings	Number of Gauze 60, Price per Dozen	Number of Gauze 70, Price per Dozen	Number of Gauze 80, Price per Dozen	Number of Gauze 90, Price per Dozen	Number of Gauze 100, Price per Dozen
5	1	24	18	35	33.00	40.00	46.00	52.00	62.00
10	1	36	30	57	51.00	59.00	66.00	76.00	94.00
15	1¼	20	14	29	30.00	36.00	42.00	50.00	64.00
20	1¼	24	18	38	36.00	44.00	52.00	60.00	80.00
25	1¼	30	24	51	46.00	55.00	64.00	75.00	100.00
27	1¼	36	30	68	56.00	66.00	76.00	90.00	120.00
28	1¼	42	36	79	66.00	77.00	88.00	105.00	140.00
30	1½	24	18	39	48.00	57.00	65.00	78.00	94.00
35	1½	30	24	52	60.00	70.00	80.00	96.00	118.00
40	1½	36	30	65	72.00	84.00	95.00	114.00	142.00
45	2	24	18	57	75.00	85.00	94.00	110.00	130.00
50	2	30	24	75	90.00	101.00	112.00	132.00	160.00
55	2	36	30	93	105.00	118.00	130.00	154.00	190.00
56	2½	36	30	113	180.00	205.00	230.00	260.00	300.00
57	3	36	30	135	240.00	275.00	310.00	340.00	410.00

Please order by trade number and state mesh of gauze.

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BRASS JACKET POINTS

(Skeleton)

Fig. H-30

(With Jacket

Fig. H-31

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BRASS JACKET POINTS

These points are made of wrought pipe, heavily galvanized. Two cuts are shown: Fig. 31 represents complete Well Points with gauze and jacket; Fig. 30 shows the pipe punched with elliptical holes before the gauze and jacket are in place.

The holes are spaced uniformly and are arranged in vertical rows. The points are thoroughly galvanized inside and outside after the holes are punched and are, therefore, non-corrosive.

They are covered with a brass wire gauze, which is protected by a heavy perforated brass jacket, both being securely soldered to the skeleton point. The Drive Plug is fitted into the bottom of the point and riveted to exclude sand and dirt.

The elliptical shape of the holes furnishes a large amount of filtering surface with comparatively few openings.

We cover points to order with No. 20, No. 30, No. 40, or No. 50 gauze. No. 20 and No. 30 gauze take the same list as No. 70; No. 40 and No. 50 take the same list as No. 60.

Well points have been furnished in lengths other than those shown in catalogue price list at a price proportionate to the sizes shown in list.

The size of gauze is always stenciled on the shank of point.

NOTE.-- In all Brass Jacket Well Points, unless otherwise specified, the length of jacket will be six inches shorter than the length of pipe.

Please order by trade number and state mesh of gauze.

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BRASS JACKET POINTS

Made of Wrought Pipe, Galvanized

Price List

Trade Number	Size in Diameter Inches	L'gth of Point Inches	L'gth of Jacket Inches	Aggregate Number of Square Inches of Opening	Number of Gauze 60, Price per Dozen	Number of Gauze 70, Price per Dozen	Number of Gauze 80, Price per Dozen	Number of Gauze 90, Price per Dozen	Number of Gauze 100, Price per Dozen	Number of Gauze 120, Price per Dozen
74	1	24	18	15	33.00	40.00	46.00	52.00	62.00	74.00
76	1	30	24	20	42.00	49.00	56.00	64.00	78.00	94.00
78	1	36	30	25	51.00	59.00	66.00	76.00	94.00	114.00
80	1	42	36	30	60.00	68.00	76.00	88.00	120.00	134.00
82	1	48	42	35	69.00	78.00	86.00	100.00	136.00	154.00
84	1	54	48	40	78.00	87.00	96.00	112.00	152.00	174.00
84½	1	60	54	45	87.00	96.00	106.00	124.00	168.00	194.00
85	1	66	60	50	96.00	105.00	116.00	136.00	184.00	214.00
85½	1	72	66	55	105.00	114.00	126.00	148.00	200.00	234.00
86	1¼	20	14	15	30.00	36.00	42.00	50.00	64.00	80.00
90	1¼	24	18	20	36.00	44.00	52.00	60.00	80.00	105.00
94	1¼	30	24	26½	46.00	55.00	64.00	75.00	100.00	130.00
98	1¼	36	30	33	56.00	66.00	76.00	90.00	120.00	155.00
100	1¼	42	36	39½	66.00	77.00	88.00	105.00	140.00	180.00
102	1¼	48	42	45½	76.00	88.00	100.00	120.00	160.00	205.00
106	1¼	54	48	52	86.00	99.00	112.00	135.00	180.00	230.00
110	1¼	60	54	58½	96.00	110.00	124.00	150.00	200.00	255.00
112	1¼	66	60	65	106.00	121.00	136.00	165.00	220.00	280.00
114	1¼	72	66	71½	116.00	132.00	148.00	180.00	240.00	305.00
114½	1¼	78	72	78	126.00	143.00	160.00	195.00	260.00	330.00
136	1½	24	18	22½	48.00	57.00	65.00	78.00	94.00	112.00
140	1½	30	24	30	60.00	70.00	80.00	96.00	118.00	139.00
144	1½	36	30	37½	72.00	84.00	95.00	114.00	142.00	166.00
146	1½	42	36	45	84.00	97.00	110.00	132.00	166.00	193.00
148	1½	48	42	52½	96.00	111.00	125.00	150.00	188.00	220.00
150	1½	54	48	60	108.00	124.00	140.00	168.00	204.00	247.00
152	1½	60	54	67½	120.00	138.00	155.00	186.00	228.00	274.00
154	1½	66	60	75	132.00	151.00	170.00	204.00	252.00	301.00
156	1½	72	66	82½	144.00	165.00	185.00	222.00	276.00	328.00
160	2	24	18	26	75.00	85.00	94.00	110.00	130.00	150.00
164	2	30	24	35	90.00	101.00	112.00	132.00	160.00	185.00
168	2	36	30	43½	105.00	118.00	130.00	154.00	190.00	220.00

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BRASS JACKET POINTS — Continued

Trade Number	Size in Diameter Inches	L'gth of Point Inches	L'gth of Jacket Inches	Aggregate Number of Square Inches of Opening	Number of Gauze 60, Price per Dozen	Number of Gauze 70, Price per Dozen	Number of Gauze 80, Price per Dozen	Number of Gauze 90, Price per Dozen	Number of Gauze 100, Price per Dozen	Number of Gauze 120, Price per Dozen
170	2	42	36	52½	120.00	134.00	148.00	176.00	220.00	255.00
172	2	48	42	62	135.00	151.00	166.00	198.00	250.00	290.00
174	2	54	48	70	150.00	167.00	184.00	220.00	280.00	325.00
176	2	60	54	78½	165.00	184.00	202.00	242.00	310.00	360.00
178	2	66	60	87½	180.00	200.00	220.00	264.00	340.00	395.00
180	2	72	66	96	195.00	217.00	238.00	286.00	370.00	430.00
180½	2	78	72	105	210.00	234.00	256.00	308.00	400.00	465.00
182	2	84	78	113	225.00	251.00	274.00	330.00	430.00	500.00
182½	2	90	84	122½	240.00	268.00	292.00	352.00	460.00	535.00
183½	2	96	90	132	255.00	285.00	310.00	374.00	490.00	570.00
183	2½	30	24	40	155.00	175.00	195.00	220.00	250.00	290.00
184	2½	36	30	50	180.00	205.00	230.00	260.00	300.00	350.00
188	2½	48	42	70	230.00	265.00	300.00	340.00	400.00	470.00
192	2½	60	54	90	280.00	325.00	370.00	420.00	500.00	590.00
196	2½	72	66	110	330.00	385.00	440.00	500.00	600.00	710.00
197	2½	84	78	130	380.00	445.00	510.00	580.00	700.00	830.00
199	2½	96	90	150	430.00	505.00	580.00	660.00	800.00	950.00
200	3	36	30	67½	240.00	275.00	310.00	340.00	410.00	490.00
204	3	48	42	94½	300.00	345.00	390.00	430.00	520.00	630.00
208	3	60	54	111½	360.00	415.00	470.00	520.00	639.00	770.00
212	3	72	66	138½	420.00	485.00	550.00	610.00	740.00	910.00
214	3	84	78	165½	480.00	555.00	630.00	700.00	850.00	1050.00
215	3	96	90	192½	540.00	625.00	710.00	790.00	960.00	1190.00
202	3½	36	30	70	300.00	345.00	390.00	430.00	520.00	610.00
206	3½	48	42	98	360.00	415.00	470.00	520.00	630.00	750.00
210	3½	60	54	126	420.00	485.00	550.00	610.00	740.00	890.00
213	3½	72	60	140	480.00	555.00	630.00	700.00	850.00	1030.00
218	3½	84	72	168	555.00	640.00	725.00	805.00	960.00	1170.00
219	3½	96	84	196	630.00	735.00	820.00	900.00	1070.00	1310.00
216	4	48	36	90	480.00	520.00	560.00	600.00	700.00	810.00
220	4	72	60	150	630.00	695.00	760.00	840.00	1000.00	1270.00
224	4	96	84	210	780.00	870.00	960.00	1080.00	1300.00	1610.00
228	4	120	108	270	930.00	1045.00	1160.00	1320.00	1600.00	2010.00

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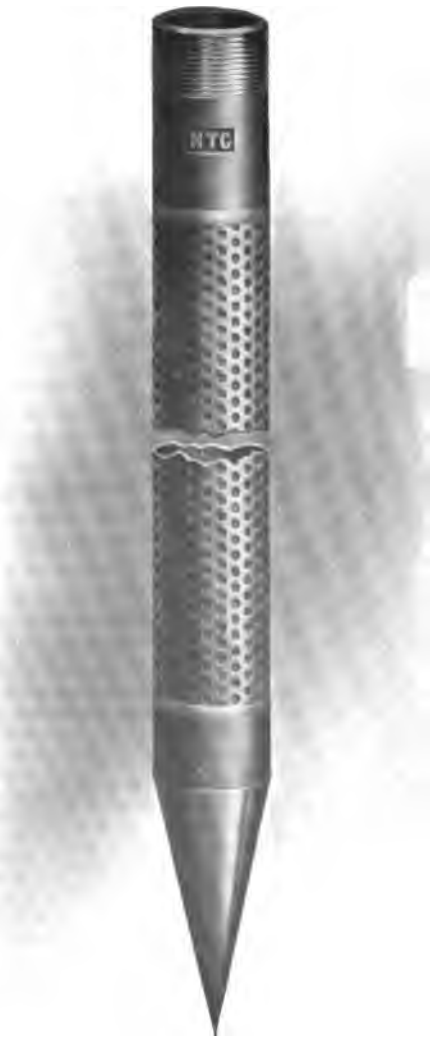
FLUSH OR TUBULAR WELL POINTS

Fig. H-32



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FLUSH OR TUBULAR WELL POINTS

Made of Wrought Pipe, Galvanized

Price List

Trade No.	Inside Diameter Inches	Length of Point Inches	Length of Jacket Inches	Aggregate No. Sq. Inch Openings	No. of Gauze 60. Price per Doz.	No. of Gauze 70. Price per Doz.	No. of Gauze 80 Price per Doz.	No. of Gauze 90. Price per Doz.	No. of Gauze 100. Price per Doz.
73	1	30	18	15	34.00	40.00	45.00	50.00	55.00
75	1	36	18	15	38.00	44.00	50.00	56.00	66.00
75½	1	36	24	20	43.00	49.00	55.00	62.00	77.00
77	1	42	24	20	47.00	54.00	60.00	68.00	82.00
77½	1	42	30	25	52.00	59.00	65.00	74.00	93.00
79	1	48	30	25	56.00	63.00	70.00	80.00	98.00
79½	1	48	36	30	61.00	68.00	75.00	86.00	109.00
81	1	54	36	30	65.00	73.00	80.00	92.00	114.00
81½	1	54	42	35	70.00	78.00	85.00	98.00	125.00
83	1	60	42	35	74.00	82.00	90.00	104.00	130.00
116	1¼	24	18	20	36.00	44.00	52.00	60.00	80.00
117	1¼	30	18	20	41.00	49.00	57.00	65.00	85.00
117½	1¼	30	24	28	46.00	55.00	64.00	75.00	100.00
118	1¼	36	24	28	51.00	60.00	68 00	80.00	105.00
119	1¼	42	24	28	56.00	65.00	73.00	85.00	110.00
120	1¼	48	24	28	61.00	70.00	78.00	90.00	115.00
121	1¼	36	30	36	56.00	66.00	76.00	90.00	120.00
122	1¼	42	30	36	61.00	71.00	80.00	95.00	125.00
123	1¼	48	30	36	66.00	76.00	85.00	100.00	130.00
124	1¼	54	30	36	71.00	81.00	91.00	105.00	135.00
125	1¼	42	36	39	66.00	77.00	88.00	105.00	140.00
126	1¼	48	36	39	71.00	82.00	92.00	110.00	145.00
127	1¼	54	36	39	76.00	87.00	97.00	115.00	150.00
128	1¼	60	36	39	81.00	92.00	102.00	120.00	155.00
129	1¼	48	42	45½	76.00	88.00	100.00	120.00	160.00
130	1¼	54	42	45½	81 00	92.00	104.00	125.00	165.00
130½	1¼	60	42	45½	86.00	98.00	110.00	130.00	170.00
131	1¼	66	42	45½	91.00	103.00	115.00	135.00	175.00
131½	1¼	54	48	52	86.00	99.00	112.00	135.00	180.00
132	1¼	60	48	52	91.00	104.00	116.00	140.00	180.00
133	1¼	66	48	52	96.00	109.00	122.00	145.00	185.00
135	1¼	72	48	52	101.00	114.00	127.00	150.00	190.00
570	1¼	60	54	58½	96.00	110.00	124.00	150.00	200.00
571	1¼	66	54	58½	101.00	115.00	129.00	155.00	205.00
572	1¼	72	54	58½	106.00	120.00	134.00	160.00	210 00
573	1¼	66	60	65	106.00	121.00	136.00	165.00	220.00
574	1¼	72	60	65	111.00	126.00	141.00	170.00	225.00
575	1¼	78	60	65	116.00	131.00	146.00	175.00	230.00
576	1¼	72	66	71½	116.00	132.00	148.00	180.00	240.00
577	1¼	78	66	71½	121.00	137.00	153.00	185.00	245.00
578	1¼	84	66	71½	126.00	142.00	158.00	190.00	250 00
579	1¼	78	72	78	126.00	143.00	160.00	195.00	260.00
580	1¼	84	72	78	131.00	148.00	165.00	200.00	265.00
581	1¼	90	72	78	136.00	153.00	170.00	205.00	270.00
582	1¼	84	78	84½	136.00	154.00	172.00	210.00	280.00
583	1¼	90	78	84½	141.00	159.00	177.00	215.00	285.00
584	1¼	96	78	84½	146.00	164.00	182.00	220.00	290.00

The Plug is securely riveted to enable point to be driven from the inside.
Any length or size not in the above list will be made to order on short notice.
Please order by trade number and state mesh of gauze.

Google

WASHER POINTS

Fig. H-33

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WASHER POINTS

Made from galvanized wrought pipe, holes bored and counter-sunk to exact gauge. Holes are covered with carefully fitted circular pieces of wire gauze, held in place by brass washers and riveted. Holes are ⅝-inch diameter; washer ⅞-inch.

Plugs are put in after gauze and washers are riveted in place. Extra washers and gauze, cut to size, supplied when desired.

Price List

Trade No.	Inside Diam. Inches	Length of Point Inches	Number of Holes	Aggregate Number of Square Inches Openings	Number of Gauze 60, Price per Dozen	Number of Gauze 70, Price per Dozen	Number of Gauze 80, Price per Dozen	Number of Gauze 90, Price per Dozen	Number of Gauze 100, Price per Dozen
300	1¼	20	50	6	30.00	36.00	42.00	50.00	64.00
301	1¼	24	60	7¼	36.00	44.00	52.00	60.00	80.00
302	1¼	30	80	9½	46.00	55.00	64.00	75.00	100.00
303	1¼	36	100	12	56.00	66.00	76.00	90.00	120.00
304	1¼	42	120	14½	66.00	77.00	88.00	105.00	140.00
305	1¼	48	140	17	76.00	88.00	100.00	120.00	160.00
308	1¼	24	80	9½	42.00	50.00	58.00	68.00	90.00
310	1¼	30	100	12	52.00	61.00	70.00	83.00	110.00
320	1½	24	80	9½	48.00	57.00	65.00	78.00	94.00
321	1½	30	110	13½	60.00	70.00	80.00	96.00	118.00
322	1½	36	130	15½	72.00	84.00	95.00	114.00	142.00
323	1½	42	150	18	84.00	97.00	110.00	132.00	160.00
323½	1½	48	170	20½	96.00	111.00	125.00	150.00	180.00
324	2	30	140	17	90.00	101.00	112.00	132.00	160.00
325	2	36	170	20½	105.00	118.00	130.00	154.00	190.00
326	2	42	200	24	120.00	134.00	148.00	176.00	220.00
327	2	48	230	27½	135.00	151.00	166.00	198.00	250.00
328	2	54	260	31½	150.00	167.00	184.00	220.00	280.00
329	2	60	290	35	165.00	184.00	202.00	242.00	310.00
330	2	66	320	38½	180.00	200.00	220.00	264.00	340.00
331	2	72	350	42	195.00	217.00	238.00	286.00	370.00
332	2½	36	225	27	180.00	205.00	230.00	260.00	300.00
333	2½	48	325	39	230.00	265.00	300.00	340.00	400.00
334	2½	60	425	51	280.00	325.00	370.00	420.00	500.00
335	2½	72	525	63	330.00	385.00	440.00	500.00	600.00
335½	2½	84	625	75	380.00	445.00	510.00	580.00	700.00
337	2½	96	725	87	430.00	505.00	580.00	660.00	800.00
338	3	36	250	30	240.00	275.00	310.00	340.00	410.00
339	3	48	360	43	300.00	345.00	390.00	430.00	520.00
342	3	60	470	56	360.00	415.00	470.00	520.00	630.00
346	3	72	580	69	420.00	485.00	550.00	610.00	740.00
348	3	84	690	82	480.00	555.00	630.00	700.00	850.00
350	3	96	800	95	540.00	625.00	710.00	790.00	960.00
370	4	48	440	50	480.00	520.00	560.00	600.00	700.00
374	4	72	660	78	630.00	695.00	760.00	840.00	1000.00
378	4	96	1020	125	780.00	870.00	960.00	1080.00	1300.00
382	4	120	1380	175	930.00	1045.00	1160.00	1320.00	1600.00

Please order by trade number and state mesh of gauze.

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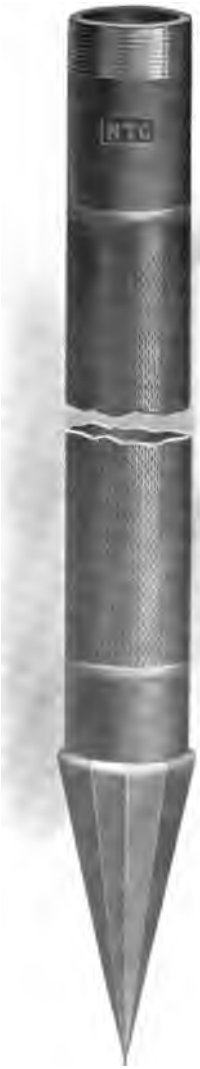
SINGLE SCREEN POINTS

(With No. 21 Jacket)

Fig. H-34



(Showing Details of Construction)

Fig. H-35

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SINGLE SCREEN DRIVE WELL POINTS

Single screen drive well points are made by covering the perforated pipe with a brass jacket of the following sizes of perforated brass: No 1, No. 2, No. 3, No. 4, and No. 21 perforation (see illustrations, page 31). No. 1 perforation has same size openings as 60 mesh brass wire cloth; No. 2 as 50 mesh; No. 3 as 40 mesh; No. 4 as 20 mesh; No. 21 as 50 mesh.

No. 21 has slotted perforations about one-eighth of an inch long by one-sixty-fourth of an inch in width and is considered much better than perforated brass with round holes, because grains of sand cannot lodge and close the openings.

These points are adapted for use in coarse sand or gravel, where driving is not severe, and are more efficient than points covered with brass wire cloth because they do not clog so easily and are less liable to corrode.

Points having wire wound on pipe before jacket is put on are recommended when the strata encountered in driving permit, as the wire holds the jacket away from the pipe and allows the water to filter through all openings, thus increasing the inlet for water over three times for the same length point made from sheet brass, and therefore stronger than wire gauze. Can furnish with flush plugs or drive plugs.

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SINGLE SCREEN DRIVE WELL POINTS

Price List

Trade No.	Inside Diam. Inches	Length of Point Inches	Length of Jacket Inches	Number Sq. In. Filtering Surface Covered with Jacket Only	Nos. 1, 2, 3, 4, Perforated Brass Price per Dozen	Number Sq. In. Filtering Surface, Wire Wound Under Jacket	Nos. 1, 2, 3, 4, Perforated Brass, Wire Wound Under Jacket Price per Dozen	No. 21 Perforated Brass	No. 21 Perforated Brass, Wire Wound Under Jacket
740	1	20	14	12	27.00	40	34.00	40.00	47.00
741	1	24	18	15	33.00	51	40.00	46.00	53.00
742	1	30	24	20	42.00	68	49.00	56.00	63.00
743	1	36	30	25	51.00	85	59.00	66.00	74.00
744	1	42	36	30	60.00	102	68.00	76.00	84.00
745	1	48	42	35	69.00	119	78.00	86.00	95.00
746	1	54	48	40	78.00	136	87.00	96.00	105.00
747	1	60	54	45	87.00	153	96.00	106.00	115.00
748	1	66	60	50	96.00	170	106.00	116.00	126.00
749	1	72	66	55	105.00	187	115.00	126.00	136.00
750	1¼	20	14	15	30.00	48	37.00	42.00	49.00
751	1¼	24	18	20	36.00	63	43.00	52.00	59.00
752	1¼	30	24	28	46.00	84	53.00	64.00	71.00
753	1¼	36	30	36	56.00	105	64.00	76.00	84.00
754	1¼	42	36	44	66.00	126	74.00	88.00	96.00
755	1¼	48	42	52	76.00	147	85.00	100.00	109.00
756	1¼	54	48	60	86.00	168	95.00	112.00	121.00
757	1¼	60	54	68	96.00	189	105.00	124.00	133.00
758	1¼	66	60	76	106.00	210	116.00	136.00	146.00
759	1¼	72	66	84	116.00	231	126.00	148.00	158.00
760	1½	24	18	24	48.00	72	57.00	65.00	74.00
761	1½	30	24	33	60.00	96	69.00	80.00	89.00
762	1½	36	30	42	72.00	120	82.00	95.00	105.00
763	1½	42	36	51	84.00	144	94.00	110.00	120.00
764	1½	48	42	60	96.00	168	108.00	125.00	137.00
765	1½	54	48	69	108.00	192	120.00	140.00	152.00
766	1½	60	54	78	120.00	216	132.00	155.00	167.00
767	1½	66	60	87	132.00	240	146.00	170.00	184.00
768	1½	72	66	96	144.00	264	158.00	185.00	199.00
770	2	24	18	29	75.00	90	87.00	94.00	106.00
771	2	30	24	39	90.00	120	102.00	112.00	124.00
772	2	36	30	49	105.00	150	119.00	130.00	144.00
773	2	42	36	59	120.00	180	134.00	148.00	162.00
774	2	48	42	69	135.00	210	151.00	166.00	182.00
775	2	54	48	79	150.00	240	166.00	184.00	200.00
776	2	60	54	89	165.00	270	181.00	202.00	218.00
777	2	66	60	99	180.00	300	198.00	220.00	238.00
778	2	72	66	109	195.00	330	213.00	238.00	256.00

Please order by trade number and state desired number of perforated brass.

No. 1 perforated brass furnished unless otherwise specified.

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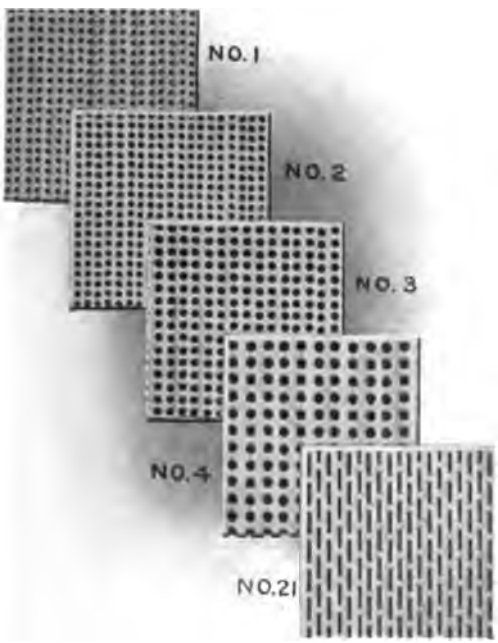
PERFORATED SHEET BRASS

Sizes for use with Single Screen Drive Well Points

Fig. H-36



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OPEN END OR WELL POINT EXTENSIONS

Fig. H-37

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OPEN END OR WELL POINT EXTENSIONS

Made of Wrought Pipe, Galvanized

Price List

Trade No.	Inside Diam. Inches	Length of Point, Inches	Length of Jacket, Inches	Aggregate Number of Square Inches, Openings	Number of Gauze 60, Price per Dozen	Number of Gauze 70, Price per Dozen	Number of Gauze 80, Price per Dozen	Number of Gauze 90, Price per Dozen	Number of Gauze 100, Price per Dozen
91	1¼	24	18	19½	36.00	44.00	52.00	60.00	80.00
95	1¼	30	24	26	46.00	55.00	64.00	75.00	100.00
99	1¼	36	30	32½	56.00	66.00	76.00	90.00	120.00
101	1¼	42	36	39	66.00	77.00	88.00	105.00	140.00
103	1¼	48	42	45½	76.00	88.00	100.00	120.00	160.00
107	1¼	54	48	52	86.00	99.00	112.00	135.00	180.00
111	1¼	60	54	58½	96.00	110.00	124.00	150.00	200.00
134	1½	24	18	22½	48.00	57.00	65.00	78.00	94.00
141	1½	30	24	30	60.00	70.00	80.00	96.00	118.00
145	1½	36	30	37½	72.00	84.00	95.00	114.00	142.00
147	1½	42	36	45	84.00	97.00	110.00	132.00	166.00
149	1½	48	42	52½	96.00	111.00	125.00	150.00	188.00
151	1½	54	48	60	108.00	124.00	140.00	168.00	204.00
153	1½	60	54	67½	120.00	138.00	155.00	186.00	228.00
155	1½	66	60	75	132.00	151.00	170.00	204.00	252.00
157	1½	72	66	82½	144.00	165.00	185.00	222.00	276.00
165	2	30	24	35	90.00	101.00	112.00	132.00	160.00
169	2	36	30	43¾	105.00	118.00	130.00	154.00	190.00
171	2	42	36	52½	120.00	134.00	148.00	176.00	220.00
173	2	48	42	61¼	135.00	151.00	166.00	198.00	250.00
175	2	54	48	70	150.00	167.00	184.00	220.00	280.00
177	2	60	54	78¾	165.00	184.00	202.00	242.00	310.00
179	2	66	60	87½	180.00	200.00	220.00	264.00	340.00
181	2	72	66	96¼	195.00	217.00	238.00	286.00	370.00
185	2½	36	30	50	180.00	205.00	230.00	260.00	300.00
189	2½	48	42	70	230.00	265.00	300.00	340.00	400.00
191	2½	60	54	90	280.00	325.00	370.00	420.00	500.00
193	2½	72	66	110	330.00	385.00	440.00	500.00	600.00
201	3	36	30	67½	240.00	275.00	310.00	340.00	410.00
205	3	48	42	94½	300.00	345.00	390.00	430.00	520.00
209	3	60	54	121½	360.00	415.00	470.00	520.00	630.00
203	3½	36	30	67½	300.00	345.00	390.00	430.00	520.00
207	3½	48	42	94½	360.00	415.00	470.00	520.00	630.00
211	3½	60	54	121½	420.00	485.00	550.00	610.00	740.00
231	3½	72	66	148½	480.00	555.00	630.00	700.00	850.00
217	4	48	36	90	480.00	520.00	560.00	600.00	700.00
221	4	72	60	150	630.00	695.00	760.00	840.00	1000.00
225	4	96	84	210	780.00	870.00	960.00	1080.00	1300.00
229	4	120	108	270	930.00	1045.00	1160.00	1320.00	1600.00

Please order by trade number and state mesh of gauze.

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WELL POINTS

Large Size

Fig. H-38

Trade No. 400

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WELL POINTS

Large Size

These points are particularly adapted to railroad and water works service. Occasionally these points are furnished in black pipe, but unless otherwise specified, they will be furnished thoroughly galvanized.

Price List of Trade No. 400

Diameter Pipe Inches	No. 60 Gauze Per Foot	No. 70 Gauze Per Foot	No. 80 Gauze Per Foot	No. 90 Gauze Per Foot	No 100 Gauze Per Foot
4½	4.00	4.50	5.00	5.50	6.00
5	5.00	5.75	6.50	7.25	8.00
6	5.80	6.50	7.25	8.00	9.00
7	7.00	7.75	8.50	9.25	10.50
8	8.50	9.25	10.00	11.00	12.00
9	11.00	12.00	13.00	14.00	15.00
10	13.00	14.00	15.25	16.50	18.00
12	16.00	17.00	18.50	20.00	22.00

When ordering, please observe the following instructions:

1. Give size and length desired.

2. If covered, state size gauze desired. We always furnish No. 8 perforated sheet brass jacket (same covering the gauze) unless some other size of perforated sheet brass is distinctly specified.

3. Customers should state whether they desire open end or whether fitted with drive or flush plug. Where orders are received designating these points as "Strainers," open ends will be furnished.

4. Please order by trade number.

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LARGE STRAINERS

Fig. H-39

Trade No. 405

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LARGE STRAINERS

For Irrigating, Artesian, and Tubular Wells

These strainers are made of black pipe, galvanized after the holes have been punched. The holes are punched by machinery insuring a careful and equal spacing.

This strainer can be used in wells having a heavy pressure or suction without injury to the wire cloth.

The wire covering regularly used on these strainers is a very heavy woven wire sugar cloth which permits of filtration at every point of its surface and at the same time is possessed of great strength and capable of withstanding more hard usage than the ordinary light wire gauze.

For efficiency, heavy work, and large filtering capacity this type of strainer is particularly recommended. Furnished with open ends, unless ordered with driving plug. Six inches of blank on each end of strainer.

Price List of Trade No. 405

Inside Diameter Inches	Outside Diameter Inches	Number of Square Ins. Openings per Foot	No. 60 Gauze per Foot	No. 80 Gauze per Foot	No. 90 Gauze per Foot	No. 100 Gauze per Foot
1	1.435	12	.60	.80	1.00	1.25
1¼	1.785	17	.75	.95	1.20	1.50
1½	2.025	22	.90	1.15	1.45	1.75
2	2.495	24	1.25	1.50	1.80	2.25
2½	2.995	27	2.00	2.75	3.25	3.75
3	3.625	30	2.75	3.50	4.00	4.50
3½	4.125	33	3.15	4.00	4.50	5.25
4	4.625	36	3.90	4.75	5.25	6.25
4½	5.125	39	4.50	5.50	6.25	7.25
5	5.685	42	5.25	6.50	7.50	8.25
6	6.745	48	6.00	7.50	8.25	9.25
7	7.745	51	7.50	9.00	9.50	10.75
8	8.745	54	9.00	10.50	11.50	12.50
9	9.805	60	12.00	14.00	15.00	16.00
10	10.875	67	14.00	16.50	18.00	20.00
12	12.875	72	18.00	20.50	22.50	25.00

Please order by trade number.

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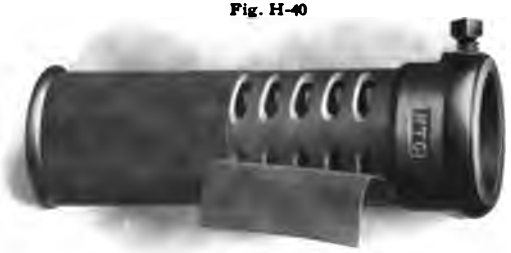
SUCTION PIPE STRAINERS

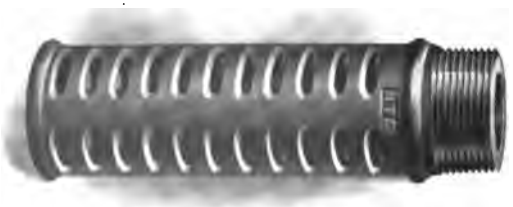
For Open Wells and Cisterns

Fig. H-40



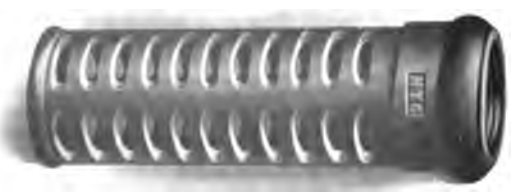
With Set Screws

Fig. H-41



With Male Thread

Fig. H-42



With Female Thread

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SUCTION PIPE STRAINERS

For Open Wells and Cisterns

Price List

With Set Screw

Trade No.		Galvanized, with Brass Gauze Each	Galvanized, without Brass Gauze Each	Plain, without Brass Gauze Each
499	For ¾ inch Pipe.....	.28	.22	.18
500	For 1 " "	.28	.22	.18
501	For 1¼ " "	.32	.24	.20
502	For 1½ " "	.36	.26	.24
503	For 2 " "	.50	.40	.36

With Male Thread

510	For 1 inch Pipe.....	.28	.22	.18
511	For 1¼ " "	.32	.24	.20
512	For 1½ " "	.36	.26	.24
513	For 2 " "	.50	.40	.36

With Female Thread

520	For 1 inch Pipe.....	.28	.22	.18
521	For 1¼ " "	.32	.24	.20
522	For 1½ " "	.36	.26	.24
523	For 2 " "	.50	.40	.36

Please order by trade number.

Can cover with any size covering. Unless otherwise specified we will furnish strainers covered with No. 60 gauze.

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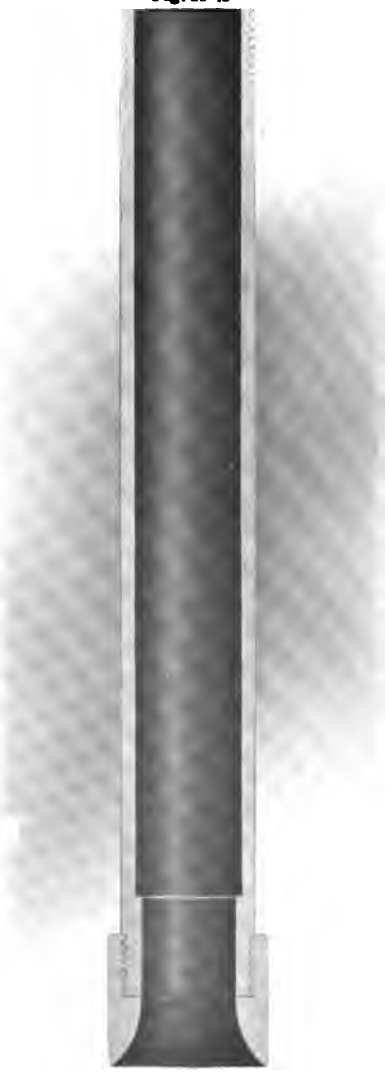
WROUGHT TUBULAR WELL CYLINDERS

Fig. H-43



Trade No. 440

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WROUGHT TUBULAR WELL CYLINDERS

Figure H-43 represents a polished tubular well cylinder made of galvanized or plain extra strong wrought pipe, bored and polished; they are furnished, unless otherwise specified, with shoulder for holding turned coupling for seating check valve; shoulders in cylinders 24″ or 36″ long are 3″ from bottom of cylinder, while in cylinders 48″ long, this shoulder is 12″ from bottom of cylinder.

Price List of Trade No. 440

Diameter of Cylinder Inches	Length of Cylinder Inches	Price Painted with Driving Shoe	Price Galvanized with Driving Shoe	Price Painted without Driving Shoe	Price Galvanized without Driving Shoe
2	24	3.00	3.50	2.25	2.80
2	36	4.00	4.50	3.25	3.80
2	48	5.00	5.75	4.25	5.00
2½	36	6.65	7.50	5.75	6.50
2½	48	8.50	9.25	8.35	8.25
3	36	9.00	10.00	8.00	8.80
3	48	11.50	12.25	10.50	11.00
4	36	14.00	15.75	12.00	13.75
4	48	17.50	20.00	15.50	18.00

Please order by trade number.

When so specified we furnish cylinders bored straight through without shoulder.

Unless otherwise specified cylinders will be furnished galvanized and without drive shoes.

Where drive shoes are specified they will be furnished as follows: A close pattern drive shoe (as illustrated on page 55) will always be furnished with cylinder bored straight through; an open pattern drive shoe will be furnished with all cylinders having a shoulder.

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WROUGHT TUBULAR WELL CYLINDERS

Fig. H-44

Trade No. 431

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WROUGHT TUBULAR WELL CYLINDERS

(Complete)

Figure H-44 represents a No. 431 Polished Tubular Well Cylinder made of galvanized or plain extra strong wrought pipe, bored and polished, fitted wth driving shoe, turned coupling, two leather plunger valves, and three-foot sixty gauze flush well point. If desired we will furnish four leather plunger valves at small additional cost.

Price List of Trade No. 431

Diameter of Cylinder Inches	Length of Cylinder Inches	Price, Painted	Price, Galvanized
2	24	7.65	8.10
2	36	8.50	9.00
2	48	9.50	10.00
2½	36	16.50	17.00
2½	48	18.50	19.00
3	36	22.50	23.50
3	48	25.00	26.00
4	36	41.00	43.00
4	48	45.00	48.00

Please order by trade number.

When so specified, we furnish cylinders bored straight through without shoulder.

A close pattern drive shoe as shown on page 55 will always be furnished with cylinders bored straight through.

An open pattern drive shoe will be furnished with all cylinders having a shoulder. Unless otherwise specified cylinders are always furnished galvanized.

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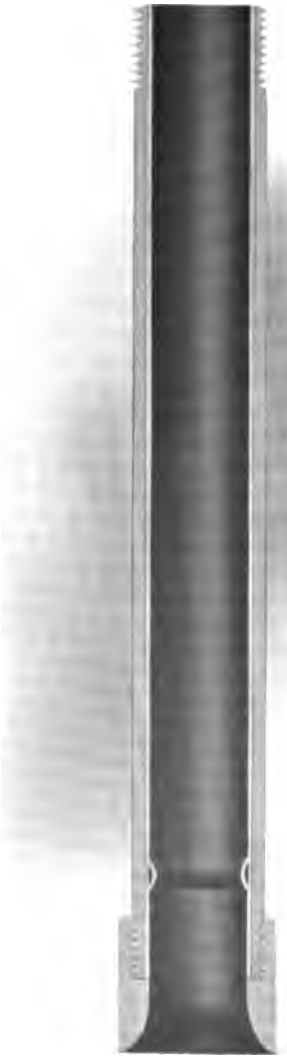
BRASS-LINED TUBULAR WELL CYLINDERS

Fig. H-45



Trade No. 441

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BRASS-LINED TUBULAR WELL CYLINDERS

Figure H-45 represents a No. 441 Galvanized Brass-Lined Tubular Well Cylinder.

This cylinder is made of wrought pipe bored out and a brass lining of seamless brass tubing inserted and swaged into position. This cylinder possesses the smoothness of an all-brass tube cylinder, and is not as liable to become injured by external pressure or sudden jars. For the small additional cost it pays to use this cylinder instead of the polished iron, as the pump will work easier and the leathers on plunger will wear longer.

Price List for Trade No. 441

Diameter of Cylinder Inches	Length of Cylinder Inches	Price, Galvanized, with Driving Shoe	Price, Galvanized, without Driving Shoe
2	24	6.10	5.25
2	36	7.75	6.90
2	48	9.80	9.00
2½	24	8.15	7.00
2½	36	10.50	9.30
2½	48	14.00	12.80
3	24	10.00	8.50
3	36	13.00	11.50
3	48	17.00	15.50
4	36	19.00	16.50
4	48	24.00	21.50

Please order by trade number.

Unless otherwise specified, these cylinders will be furnished with shoulder 3″ from bottom (as illustrated).

When so specified, we furnish cylinders bored straight through without shoulder.

Cylinders will be furnished galvanized and without drive shoes, unless otherwise specified.

When drive shoes are specified they will be furnished as follows: A close pattern drive shoe (as illustrated on page 55) will always be furnished with cylinders bored straight through; an open pattern drive shoe will be furnished with all cylinders having a shoulder.

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BRASS-LINED TUBULAR WELL CYLINDERS

Fig. H-46

Trade No. 442

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BRASS-LINED TUBULAR WELL CYLINDERS

(Complete)

Figure H-46 represents a No. 442 Galvanized Brass-Lined Tubular Well Cylinder, fitted complete with driving shoe, turned coupling, four leather plunger valves and either Scott Perfection or Brass Jacket flush three-foot well point, covered with sixty gauze; 2-inch and 2½-inch cylinders take 1¼-inch well point, 3-inch takes 2-inch well point, and 4-inch takes 2½-inch well point.

The general remarks appearing on previous page apply also to the above cylinder.

Price List of Trade No. 442

Diameter of Cylinder Inches	Length of Cylinder Inches	Price, with Three-foot Regular Well Point	Price, with Three-foot Scott Perfection Well Point
2	24	12.00	13.50
2	36	14.00	15.20
2	48	15.50	16.90
2½	24	18.00	19.35
2½	36	20.00	21.70
2½	48	24.00	25.20
3	24	23.25	27.50
3	36	26.00	30.50
3	48	30.25	34.50
4	36	45.50	50.00
4	48	50.50	55.00

Please order by trade number.

If specified, we can furnish cylinders having no shoulders in the brass lining, thus increasing the length of stroke. On such cylinders we will furnish a close pattern drive shoe as shown on page 55. An open pattern drive shoe is regularly furnished on complete cylinders fitted with shoulder.

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EUREKA TUBULAR WELL CYLINDERS

All Brass

Fig. H-47

Trade No. 450

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EUREKA TUBULAR WELL CYLINDERS

All Brass

This cylinder is made of seamless drawn brass tubing, and fitted with perfection check valve, far more durable than a poppet valve. It is set in place after the well is made, using the seating tool attached to the drill rod to crowd it down to its place. The spring dog on lower coupling holds firmly to the walls of the inside of pipe or well-casing, while the cylinder proper is revolved by the setting tool as it screws down on the coupling, expanding the rubber packing between the cylinder and coupling and locking it to the pipe. It may be attached to the screen point in the same manner.

See following page for directions on setting these cylinders.

Price List of Trade No. 450

Complete with Valves and Spring Dog Coupling

Size of Well Inches	Inside Diameter Inches	Stroke Inches	Price of Cylinder Complete	Size of Well Inches	Inside Diameter Inches	Stroke Inches	Price of Cylinder Complete
2	1 3/16	12	6.40	4 1/2	4	16	50.00
2	1 3/16	16	7.60	4 1/2	4	24	58.00
2 1/2	2 1/4	12	11.00	5	4 1/2	24	60.00
2 1/2	2 1/4	16	12.50	5	4 1/2	36	80.00
3	2 3/4	12	15.00	6	5 1/2	24	112.00
3	2 3/4	16	17.00	6	5 1/2	36	136.00
3 1/2	3	12	30.00	7	6 1/2	24	180.00
3 1/2	3	16	33.00	7	6 1/2	36	220.00
4	3 1/2	16	36.00	8	7 7/16	36	360.00
4	3 1/2	24	42.00	8	7 7/16	42	400.00

Please order by trade number.

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SEATING TOOL FOR EUREKA BRASS CYLINDERS

Fig. H-48

Trade No. 451

Price List of Trade No. 451

Size of Cylinder Inches	Price of Cylinder Each	Size of Cylinder Inches	Price of Cylinder Each
2	.60	5	6.00
$2\frac{1}{2}$	.90	6	8.00
3	1.20	7	10.00
4	2.40	8	12.00

Please order by trade number.

DIRECTIONS FOR SETTING

EUREKA CYLINDER

Lower cylinder into well on a line of pipe having a seating tool at the bottom; when desired depth is reached, turn pipe, thus screwing dog-coupling up against rubber packer, expanding it in the well pipe, making a tight joint. The valves and pump rod are then put in place.

To remove cylinder from well, reverse operation.

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TUBULAR WELL VALVES

Fig. H-49
Check

Trade No. 461

Fig. H-50
Plunger

Trade No. 460

Fig. H-51
Four-Leather Plunger

Trade No. 475

Fig. H-52
Ball Check

Trade No. 471

Fig. H-53
Ball Plunger

Trade No. 470

Fig. H-54
Four-Leather Ball Plunger

Trade No. 473

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Fig. H-55
Bale Top Check

Trade No. 472

Fig. H-56
Bale Top Ball Check

Trade No. 474

Our Tubular Well Valves are of substantial construction. They are made of first quality brass, carefully finished, and equipped with the best oak tan leathers.

Price List

Trade No.		Size, Inches							
		Two Leather				Four Leather			
		2	2½	3	4	2	2½	3	4
460, 461, 470, 471, 472, 474	Per Set of Plunger and Check	2.40	6.00	8.00	16.00	3.20	7.00	10.00	18.00
460, 461, 475	Per Set of Plunger and Check	2.40	6.00	8.00	16.00	3.20	7.00	10.00	18.00
470, 471, 473	Per Set of Plunger and Check	4.00	9.00	12.00	32.00	5.00	10.00	14.00	36.00
461, 471, 472, 474	Check Valves Only	1.20	3.00	4.00	8.00	.....	.....	.....	.....

Please order by trade number.

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TUBULAR WELL VALVES

Fig. H-57

Trade No. 476
Marcy Plunger

Fig. H-58

Trade No. 477
Marcy Check

Fig. H-59

Trade No. 480
Marcy Check
With Spring Dog

Fig. H-60

Trade No. 481
Bremer Check
With Spring Dog

Fig. H-61

Trade No. 479
Bremer Check

Fig. H-62

Trade No. 478
Bremer Plunger

Trade No.		Size, Inches			
		2	2½	3	4
476 / 477	Per Set of Marcy Plunger and Check	3.20	8.40	12.80	16.00
476 / 480	Per Set of Marcy Check with Spring Dog and Plunger	4.20	10.20	15.40	.....
478 / 479	Per Set of Bremer Plunger and Check	2.40	6.00	8.00	.....
478 / 481	Per Set of Bremer Check with Spring Dog and Plunger	3.20	5.00	6.40	.....
477 / 479	Check Valves only	1.20	3.00	4.00	8.00

Please order by trade number.

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ALL BRASS SPOOL POPPET TUBULAR WELL VALVES

Fig. H-63
Spool Check

Trade No. 506

Fig. H-64
Four Leather Plunger

Trade No. 507

Fig. H-65
Two Leather Plunger

Trade No. 505

This valve has been designed to meet the demand for a stronger and more durable valve than the regular Tubular Well Valve. The massive construction is shown by the heavy bars on the cage and long connection rings between leather packings. It has a rubber faced spool poppet valve, which permits a full flow of water through valve opening with the least friction, as no projection extends into valve opening to interfere with flow. For efficiency, durability, and strength there is no better valve made.

Price List

Trade No.		Size, Inches							
		Two Leather				Four Leather			
		2	2½	3	4	2	2½	3	4
505, 506, 507	Per Set of Plunger and Check	4.00	9.00	12.00	32.00	5.00	10.00	14.00	36.00
506	Check Valve Only	1.20	3.00	4.00	8.00	....	....	....	....

Please order by trade number.

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MALLEABLE IRON DRIVE SHOES

With or Without Shoulder

Fig. H-66

Trade No. 433
Open Pattern

Price List

Size of Pipe Inches	Price
2	.50
2½	.70
3	.90
3½	1.20
4	1.50

Fig. H-67

Trade No. 433
Close Pattern

TOOL COUPLINGS

These Couplings, Fig. H-68, are of wrought iron, extra long and heavy, and are especially made for use with well tools.

Fig. H-68

Trade No. 623

Price List

1	x 3½	-inch	long,	for	1	inch	pipe	.....	.20
1¼	x 3¾	"	"	"	1¼	"	"	.....	.26
1½	x 3¾	"	"	"	1½	"	"	.....	.30
2	x 3¾	"	"	"	2	"	"	.....	.40

TURNED COUPLINGS

These Couplings, Fig. H-69, are of wrought iron, turned and faced; they are used to suspend strainer from shoe or shoulder in well and to seat tubular well check valve.

Fig. H-69

Trade No. 434

Price List

For 2	-inch	cylinder,	1	inch	strainer	.....	each,		.12
" 2	"	"	1¼	"	"	.....	"		.20
" 2½	"	"	1¼	"	"	.....	"		.20
" 2½	"	"	1½	"	"	.....	"		.25
" 3	"	"	1½	"	"	.....	"		.30
" 3	"	"	2	"	"	.....	"		.60
" 4	"	"	2½	"	"	.....	"		.60
" 2	"	"	1¼	"	right and left hand threads	.....	"		.24
" 2½	"	"	1½	"	"	"	"	"	.40
" 3	"	"	2	"	"	"	"	"	.60

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BRASS WIRE CLOTH

We carry in stock the following meshes Brass Wire Cloth, 36 inches in width by 100 feet in length.

List Price per Square Foot

No. 20 Mesh	.50	No. 80 Mesh	1.00
No. 30 Mesh	.65	No. 90 Mesh	1.20
No. 40 Mesh	.40	No. 100 Mesh	1.50
No. 50 Mesh	.50	No. 120 Mesh	3.00
No. 60 Mesh	.60	Woven Wire Cloth	1.50
No. 70 Mesh	.90		

RENOVATED BRASS WIRE CLOTH

We carry in stock the following meshes of Renovated Brass Wire Cloth, 12 inches in width by 5 feet in length.

List Price per Square Foot

No. 40	.30
No. 50	.30
No. 60	.30
No. 70	.30
No. 80	.30

Prices on Renovated Brass Wire Cloth are subject to our ability to furnish same.

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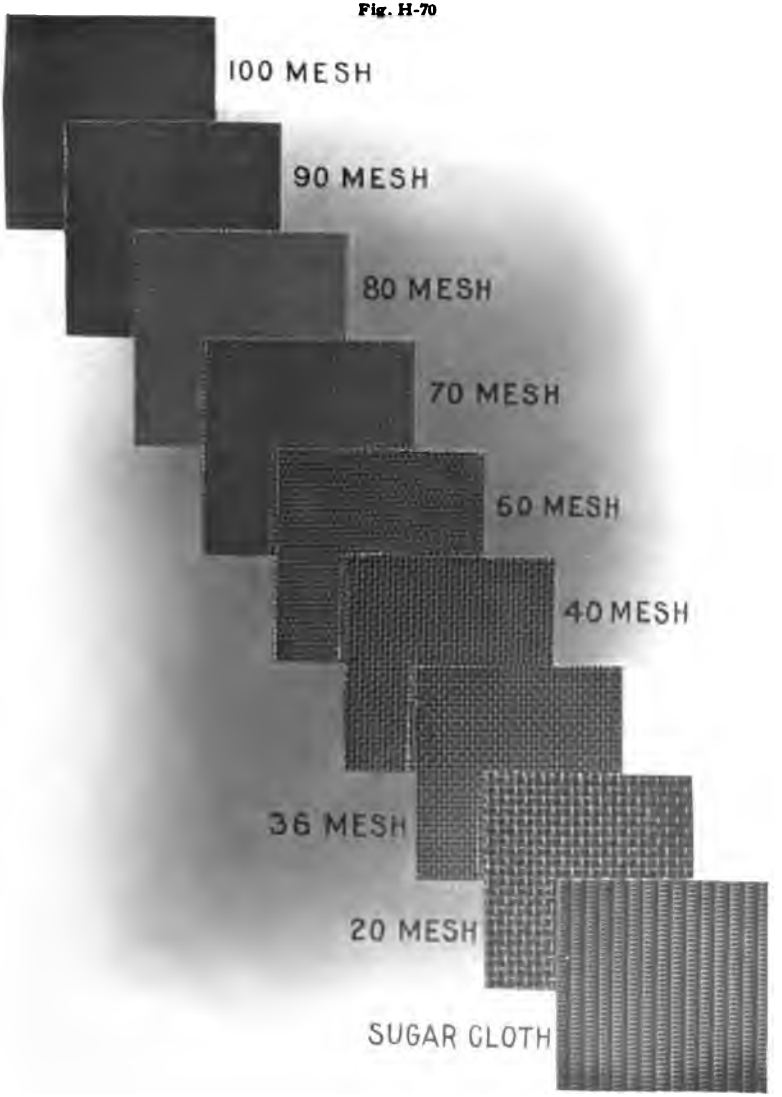
MESHES OF BRASS WIRE CLOTH

Fig. H-70



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PERFORATED SHEET BRASS

Price List per Lineal Foot

Numbers	1, 2, 3, 4	8	21
4 3/8 inches wide for 1 inch pipe	.20	.14	.30
5 5/16 " " " 1 1/4 " "	.28	.18	.40
6 1/8 " " " 1 1/2 " "	.30	.20	.50
7 5/8 " " " 2 " "	.38	.25	.65
9 1/4 " " " 2 1/2 " "	.44	.30	.75
11 " " " 3 " "	.50	.35	.85
12 " " " 3 1/2 " "	.55	.40	.90
14 1/4 " " " 4 " "	.65	.44	1.10

We carry the above perforations in stock in widths suitable for covering the different sizes of pipe.

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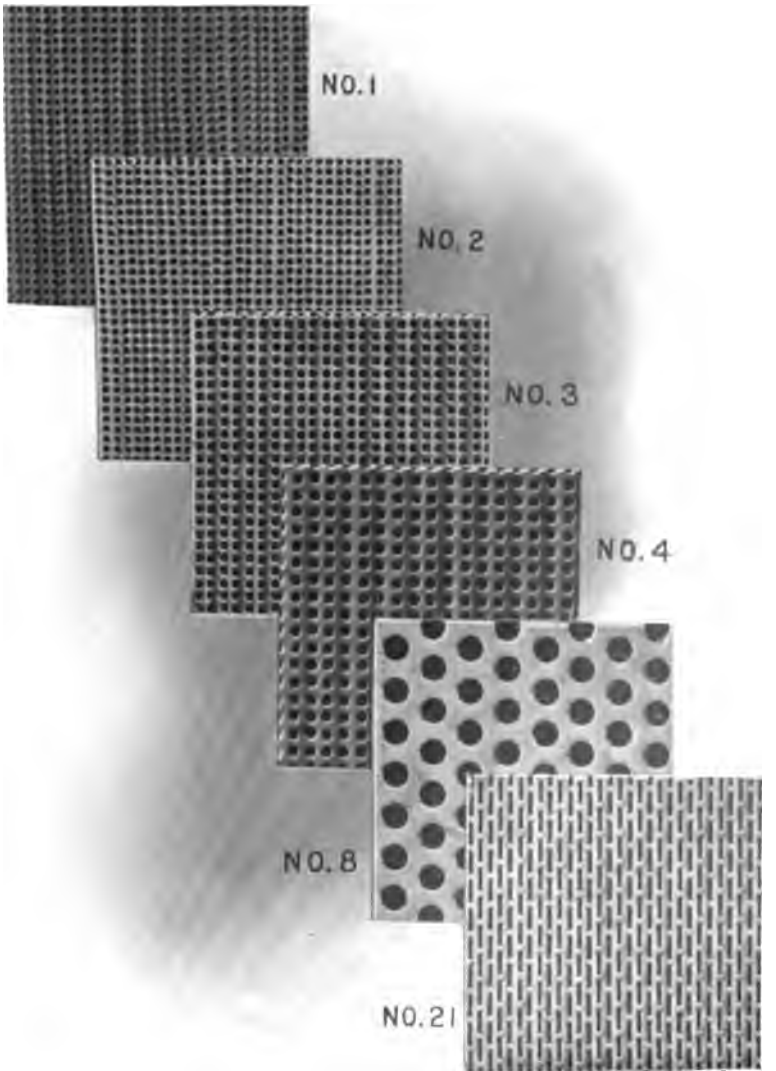
PERFORATED SHEET BRASS

Fig. H-71



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WOOD ROD COUPLINGS

Special Pattern

Fig. H-72

Two Hole

Fig. H-73

Three Hole

Two, Three and Four Hole

These couplings are made with a socket which will protect the end of the rod and prevent splitting.

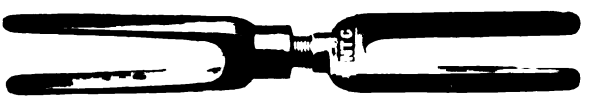
							Price per 100 set
No. 430.	For 1	and 1⅛	inch	Rod,	plain, 2 hole	.....	10.00
" 432.	" 1	" 1⅛	"	"	galvanized, 2 hole	.....	14.00
" 435	" 1	" 1⅛	"	"	plain, 3 hole	.....	16.00
" 435.	" 1	" 1⅛	"	"	galvanized, 3 hole	.....	20.00
" 436.	" 1¼	" 1⅜	"	"	plain, 3 hole	.....	20.00
" 436.	" 1¼	" 1⅜	"	"	galvanized, 3 hole	.....	24.00
" 437.	" 1½	" 1¾	"	"	plain, 4 hole	.....	60.00
" 437.	" 1½	" 1¾	"	"	galvanized, 4 hole	.....	80.00
" 438½.	" 1	" 1⅛	"	"	plain, 4 hole	.....	20.00
" 438½.	" 1	" 1⅛	"	"	galvanized, 4 hole	.....	24.00
" 439½.	" 1¼	" 1⅜	"	"	plain, 4 hole	.....	24.00
" 439½.	" 1¼	" 1⅜	"	"	galvanized, 4 hole	.....	28.00

Please order by trade number.

WOOD ROD COUPLINGS

Regular Pattern

Fig. H-74



Black, per set	.40
Galvanized, per set	.50

Unless otherwise specified we will furnish coupling illustrated as Fig. H-74.

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BEADED COUPLINGS FOR IRON RODS

Fig. H-75

These couplings are made in malleable iron, plain black or galvanized. Straight tapping is assured by our new and improved automatic machinery.

Price List

Trade Number	Size Rods	Threads to the inch	Galvanized per pound	Plain per pound
420	3/8	14, regular	.50	.40
422	3/8	16, to order	.50	.40
424	3/8 x 7/16	12 x 14	.50	.40
426	7/16	12	.50	.40
428	1/2	12	.28	.20

Please order by trade number.

PUMP ROD SOCKETS

Hexagon Pattern

Fig. H-76

Size, inches	3/8	3/8 x 7/16	7/16	1/2
Number of Threads to inch	14	14-12	12	12
Black, per pound	.40	.40	.40	.20
Galvanized, per pound	.50	.50	.50	.28

Unless otherwise specified we will furnish socket illustrated as Fig. H-76.

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Malleable Iron

OCTAGON DRIVE CAPS

Fig. H-77

Trade No. 618

These caps are especially designed for driving pipe and are consequently much heavier and stronger than the ordinary cap.

Price List

For 1¼-inch pipe.....each	.20	For 2½-inch pipe.....each	1.00
For 1⅛-inch pipe.....each	.24	For 3 -inch pipe.....each	1.25
For 2 -inch pipe.....each	.44	For 4 -inch pipe.....each	1.50

Please order by trade number.

ROUND DRIVE CAPS

Fig. H-78

Price List

Size, inches	1	1¼	1½	2
Each	.26	.35	.42	.60

In filling orders for drive caps, a heavy round pattern (Fig. H-78) will be furnished, unless otherwise specified.

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MALLEABLE IRON FITTINGS

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MALLEABLE IRON FITTINGS

STANDARD

We manufacture two different styles of standard malleable fittings, viz., plain and beaded.

Plain malleables are generally used for low pressure gas and water, house plumbing or railing work.

Beaded malleables, with the exception of a few of the small sizes, are the standard steam, air, gas, water and oil fittings, and are always furnished unless distinctly specified otherwise; the above of course does not apply when fittings are made only in the plain pattern or to caps and reducers in sizes 1 inch and smaller, which are always furnished plain unless otherwise specified.

Our standard beaded fittings are recommended for service up to 150 pounds steam pressure. Many of them are in use at 200 pounds or even 250 pounds. and in sizes 1¼ inches and smaller it is almost impossible to burst them at any pressure.

These fittings, of course, all have a large margin of safety, but the necessity for this will readily be realized when the many stresses and strains common to pipe lines are taken into consideration.

EXTRA HEAVY

For pressures greater than 150 pounds we make a line of extra heavy malleable fittings, which we recommend for steam working pressures up to 250 pounds.

HYDRAULIC

For pressures greater than 250 pounds we make a special line of double extra heavy fittings. These are called hydraulic fittings, and every one is tested to 2,000 pounds hydraulic pressure. They are designed and recommended for working pressures up to and including 800 pounds.

SIZES

The variety of sizes and styles of fittings shown on the succeeding pages will no doubt be sufficient to meet most of the requirements of the trade.

We make standard fittings in reducing sizes, with nearly every useful combination of openings.

The extra heavy fittings can be furnished in practically all useful reducing sizes.

The line of hydraulic fittings is not entirely complete, on account of the fact that the demand for these high pressure fittings is neither as great nor as diversified as in the other lines. However, we are able to furnish them in practically all reducing sizes by making those castings for which we lack patterns from suitable cast iron patterns.

GALVANIZED FITTINGS

All fittings can be obtained either black or galvanized.

TESTED FITTINGS

On special orders and at special prices we are prepared to furnish fittings, tested according to specifications.

Note

When ordering, the service for which the fittings are intended should always be fully stated.

Unless otherwise specified, beaded malleables will be furnished except where made only in plain, in which case plain will be furnished.

When galvanized fittings are ordered and neither malleable nor cast iron are specified malleable will be sent in sizes manufactured in malleable. Sizes not made in malleable will be furnished in cast iron.

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MALLEABLE IRON FITTINGS

CLASSIFICATION AND LIST

Adopted June 5, 1907

Class	A	B	*C
Black, per pound	40	20	12
Galvanized, per pound	50	28	19
Elbows	$\frac{1}{8}\times\frac{1}{8}$, $\frac{1}{4}\times\frac{1}{8}$, $\frac{3}{8}\times\frac{1}{8}$	$\frac{3}{8}\times\frac{1}{4}$, $\frac{1}{2}\times\frac{1}{4}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{1}{2}\times\frac{3}{8}$	$\frac{3}{4}$ and larger
Elbows, R. & L.	$\frac{1}{4}$, $\frac{3}{8}$	$\frac{1}{2}$, $\frac{3}{4}$, 1	$1\frac{1}{4}$ and larger
" 45°, 60°, 22½°, 11¼°		2 and smaller	2½ and larger
" Street		$\frac{1}{4}$ to 1 x $\frac{3}{4}$ inclusive	1 and larger
" " 45°		$\frac{1}{2}$	
" Side Outlet		all sizes	
" Drop		all sizes	
Tees	$\frac{1}{8}\times\frac{1}{8}$, $\frac{1}{8}\times\frac{1}{4}$, $\frac{1}{4}\times\frac{1}{8}$, $\frac{3}{8}\times\frac{1}{8}$	$\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{1}{4}\times\frac{3}{8}$, $\frac{3}{8}\times\frac{1}{4}\times\frac{1}{4}$, $\frac{3}{8}\times\frac{3}{8}\times\frac{1}{4}$, $\frac{3}{8}\times\frac{1}{4}\times\frac{3}{8}$, $\frac{1}{2}$ reducing	$\frac{3}{4}$ and larger
Tees, Four-way		all sizes	
" Drop		all sizes	
" Service		$\frac{1}{2}$, $\frac{3}{4}$, 1 x $\frac{3}{4}$ x 1	1 and larger
" " Male Branch		1 x 1 x $\frac{3}{4}$	1 and larger
Crosses		$\frac{1}{4}$ to 1 inclusive	$1\frac{1}{4}$ and larger
" Reducing		1 and smaller	$1\frac{1}{4}$ and larger
Return Bends		$\frac{3}{8}$ to 1 inclusive	$1\frac{1}{4}$ and larger
" " R. & L.	$\frac{3}{8}$, $\frac{1}{2}$	$\frac{3}{4}$ and larger	
Couplings, R. H		$\frac{1}{4}$ to $\frac{3}{4}$ inclusive	1 and larger
" R. & L.		$\frac{1}{4}$ to $\frac{3}{4}$ inclusive	1 and larger
Reducers	$\frac{1}{4}\times\frac{1}{8}$, $\frac{3}{8}\times\frac{1}{8}$	$\frac{3}{8}\times\frac{1}{4}$ to 1 x $\frac{3}{4}$ inclusive	$1\frac{1}{4}$ and larger
Caps		$\frac{1}{4}$ to 1 inclusive	$1\frac{1}{4}$ and larger
Locknuts		$\frac{1}{4}$ to $1\frac{1}{4}$ inclusive	$1\frac{1}{2}$ and larger
Extension Pieces		all sizes	
Waste Nuts		all sizes	
Chandelier Hooks		all sizes	
" Loops		all sizes	
Wall Plates		all sizes	
Y Branches, 45°, 60°, Double		all sizes	

* Fittings in Class C having one or more openings smaller than ¾ to be Class B.

The run of tees gives the sizes for the purpose of classification; the outlet being larger does not change it.

In ordering be particular to state whether beaded or plain.

An extra charge will be made for fittings not enumerated in standard list.

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MALLEABLE IRON FITTINGS

List of Standard Sizes

STANDARD ELBOWS

Fig. H-100
Plain

Fig. H-101
Beaded

	Size	Class
Plain	1/8	A
Plain	1/4 x 1/8	A
Beaded and Plain	1/4	B
Plain	3/8 x 1/8	A
Beaded and Plain	3/8 x 1/4	B
Beaded and Plain	3/8	B
Plain	1/2 x 1/4	B
Beaded and Plain	1/2 x 3/8	B
Beaded and Plain	1/2	B
Beaded and Plain	3/4 x 3/8	B
Beaded and Plain	3/4 x 1/2	B
Beaded and Plain	3/4	C
Beaded and Plain	1 x 3/8	B
Beaded and Plain	1 x 1/2	B
Beaded and Plain	1 x 3/4	C
Beaded and Plain	1	C
Beaded and Plain	1 1/4 x 3/4	C
Beaded and Plain	1 1/4 x 1	C
Beaded and Plain	1 1/4	C
Beaded and Plain	1 1/2 x 3/4	C
Beaded and Plain	1 1/2 x 1	C

	Size	Class
Beaded and Plain	1 1/2 x 1 1/4	C
Beaded and Plain	1 1/2	C
Beaded	2 x 3/4	C
Beaded and Plain	2 x 1	C
Beaded and Plain	2 x 1 1/4	C
Beaded and Plain	2 x 1 1/2	C
Beaded and Plain	2	C
Beaded	2 1/2 x 1 1/2	C
Beaded	2 1/2 x 2	C
Beaded and Plain	2 1/2	C
Beaded	3 x 2	C
Beaded	3 x 2 1/2	C
Beaded and Plain	3	C
Beaded	3 1/2 x 3	C
Beaded	3 1/2	C
Beaded	4 x 3	C
Beaded	4 x 3 1/2	C
Beaded	4	C
Beaded	4 1/2	C
Beaded	5	C
Beaded	6	C

Other sizes special.

All the above sizes can be furnished galvanized.

2 1/2 and 3-inch elbows can be furnished with 11 1/2-inch threads, per inch at special prices.

For recommendations as to pressures, see page 64.

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MALLEABLE IRON FITTINGS

Fig. H-102
45° Elbow — Beaded

STANDARD ELBOWS

Fig. H-103
60° Elbow — Beaded

	Size	Class		Size	Class
Beaded	¼	B	Beaded and Plain	2½	C
Beaded	⅜	B	Beaded and Plain	3	C
Beaded and Plain	½	B	Beaded	3½	C
Beaded and Plain	¾	B	Beaded	4	C
Beaded and Plain	1	B	Beaded	4½	C
Beaded and Plain	1¼	B	Beaded	5	C
Beaded and Plain	1½	B	Beaded	6	C
Beaded and Plain	2	B			

60° ELBOWS, PLAIN — Fig. H-103

	Size	Class		Size	Class
Plain	¾	B	Plain	2	B
Plain	1	B	Plain	2 x 1½	B
Beaded and Plain	1¼	B	Plain	2½	C
Plain	1½	B			

Fig. H-104
11¼° Elbow — Beaded

Fig. H-105
22½ Elbow — Beaded

	Size	Class		Size	Class
Beaded	2½	C	Beaded	2½	C

Other sizes special.
All the above sizes can be furnished galvanized.
For recommendations as to pressures see page 64.

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MALLEABLE IRON FITTINGS

STANDARD STREET ELBOWS

Fig. H-106

REGULAR

	Size	Class		Size	Class
Beaded	¼	B	Beaded	1½ x 1¼	C
Beaded and Plain	⅜	B	Beaded and Plain	1½	C
Beaded and Plain	½	B	Beaded	2 x 1	C
Beaded	½ x ¼	B	Beaded	2 x 1¼	C
Beaded and Plain	¾	B	Beaded	2 x 1½	C
Beaded	1 x ¾	B	Beaded and Plain	2	C
Beaded and Plain	1	C	Beaded	2½	C
Beaded	1¼ x 1	C	Beaded	2½ x 2	C
Beaded	1¼ x ¾	C	Beaded	2½ x 1½	C
Beaded and Plain	1¼	C	Beaded	3	C
Beaded	1½ x 1	C			

45° STREET ELBOWS

Fig. H-107

	Size	Class
Beaded	½	B

Other sizes special

All of the above sizes can be furnished galvanized.

In reading street ells, the female opening is read first, then the male, as 1¼″ x 1″.

For recommendations as to pressures see page 64.

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MALLEABLE IRON FITTINGS

STANDARD ELBOWS—SIDE OUTLET

Fig. H-108

	Size	Class		Size	Class
Plain	⅜ x ⅜ x ⅜	B	Plain	1 x 1 x ½	B
Plain	½ x ½ x ⅜	B	Plain	1 x 1 x ¾	B
Plain	½ x ½ x ½	B	Plain	1 x 1 x 1	B
Plain	¾ x ¾ x ⅜	B	Plain	1¼ x 1¼ x 1	B
Plain	¾ x ¾ x ½	B	Plain	1¼ x 1¼ x 1¼	B
Plain	¾ x ¾ x ¾	B	Plain	1½ x 1½ x 1½	B
Plain	1 x 1 x ⅜	B	Plain	2 x 2 x 2	B

STANDARD DROP ELBOWS—FEMALE

Fig. H-109

	Size	Class		Size	Class
Plain	¼ x ¼	B	Plain	½ x ½	B
Plain	⅜ x ¼	B	Plain	¾ x ½	B
Plain	⅜ x ⅜	B	Plain	¾ x ¾	B
Plain	½ x ⅜	B	Plain	1 x 1	B

Other sizes special.
All the above sizes can be furnished galvanized.
For recommendations as to pressures see page 64.

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MALLEABLE IRON FITTINGS

STANDARD DROP ELBOWS — MALE AND FEMALE

Fig. H-110

	Size	Class		Size	Class
Plain	1/8 x 3/8	B	Plain	3/8 x 3/4	B
Plain	1/4 x 3/8	B	Plain	1/2 x 3/4	B

STANDARD DROP ELBOWS — FLANGED

Fig. H-111
Flange Right

Fig. H-112
Flange Left

	Size	Class		Size	Class
Plain	1/4 x 3/8	B	Plain	1/4 x 3/8	B
Plain	3/8 x 3/8	B	Plain	3/8 x 3/8	B

STANDARD LONG DROP ELBOWS

Fig. H-113
With Drop 2½ Inches Long

	Size	Class		Size	Class
Plain	1/4 x 3/8	B	Plain	1/2 x 3/8	B
Plain	3/8 x 3/8	B			

Other sizes special.
All of the above sizes can be furnished galvanized.
For recommendations as to pressures see page 64.

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MALLEABLE IRON FITTINGS

STANDARD TEES

Fig. H-114
Plain

Fig. H-115
Beaded

In describing Tees the run is first named, then the outlet, thus:

$$\frac{1}{2} \times \frac{3}{8} = \frac{1}{2} \times \frac{3}{8} \times \frac{3}{8}$$

Size	Class
Plain	1/8 x 1/8 x 1/8	A
Plain	1/8 x 1/8 x 1/4	A
Plain	1/4 x 1/8 x 1/8	A
Plain	1/4 x 1/4 x 1/8	A
Beaded and Plain	1/4 x 1/4 x 1/4	B
Beaded and Plain	1/4 x 1/4 x 3/8	B
Plain	3/8 x 1/4 x 1/4	B
Plain	3/8 x 1/4 x 3/8	B
Plain	3/8 x 3/8 x 1/8	A
Plain	3/8 x 3/8 x 1/4	B
Beaded and Plain	3/8 x 3/8 x 3/8	B
Beaded and Plain	3/8 x 3/8 x 1/2	B
Plain	1/2 x 3/8 x 1/4	B
Beaded and Plain	1/2 x 3/8 x 3/8	B
Plain	1/2 x 1/4 x 1/2	B
Beaded and Plain	1/2 x 3/8 x 1/2	B
Beaded and Plain	1/2 x 3/8 x 3/4	B
Beaded and Plain	1/2 x 1/2 x 1/4	B
Beaded and Plain	1/2 x 1/2 x 3/8	B
Beaded and Plain	1/2 x 1/2 x 1/2	B
Beaded and Plain	1/2 x 1/2 x 3/4	B
Plain	3/4 x 1/4 x 3/4	B
Beaded and Plain	3/4 x 3/8 x 3/8	B
Plain	3/4 x 3/8 x 1/2	B
Beaded and Plain	3/4 x 3/8 x 3/4	B
Plain	3/4 x 3/8 x 1	B
Plain	3/4 x 1/2 x 1/4	B
Beaded and Plain	3/4 x 1/2 x 3/8	B
Beaded and Plain	3/4 x 1/2 x 1/2	B
Beaded and Plain	3/4 x 1/2 x 3/4	B
Beaded and Plain	3/4 x 1/2 x 1	B
Beaded and Plain	3/4 x 3/4 x 1/2	B
Beaded and Plain	3/4 x 3/4 x 3/4	C
Beaded and Plain	3/4 x 3/4 x 1	C
Beaded	3/4 x 3/4 x 1 1/4	C
Plain	1 x 3/8 x 1/2	B
Plain	1 x 3/8 x 3/4	B
Beaded and Plain	1 x 3/8 x 1	B
Beaded and Plain	1 x 1/2 x 1/2	B
Beaded	1 x 1/2 x 3/4	B
Beaded and Plain	1 x 1/2 x 1	B
Beaded and Plain	1 x 3/4 x 3/8	B
Beaded and Plain	1 x 3/4 x 1/2	B
Beaded and Plain	1 x 3/4 x 3/4	C
Beaded and Plain	1 x 3/4 x 1	C
Beaded and Plain	1 x 3/4 x 1 1/4	C
Beaded and Plain	1 x 1 x 1/4	B
Beaded and Plain	1 x 1 x 3/8	B
Beaded and Plain	1 x 1 x 1/2	B
Beaded and Plain	1 x 1 x 3/4	C
Beaded and Plain	1 x 1 x 1	C
Beaded and Plain	1 x 1 x 1 1/4	C
Beaded and Plain	1 x 1 x 1 1/2	C

Other sizes special.
All the above sizes can be furnished galvanized.
For recommendations as to pressures see page 64.

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MALLEABLE IRON FITTING

STANDARD TEES—Continued

	Size	Class
Beaded and Plain..	1¼ x ⅜ x 1¼	B
Beaded and Plain..	1¼ x ½ x 1	B
Beaded and Plain..	1¼ x ½ x 1¼	B
Beaded and Plain..	1¼ x ¾ x ¾	C
Beaded and Plain..	1¼ x ¾ x 1	C
Beaded and Plain..	1¼ x ¾ x 1¼	C
Beaded and Plain..	1¼ x 1 x ⅜	B
Beaded and Plain..	1¼ x 1 x ½	B
Beaded and Plain..	1¼ x 1 x ¾	C
Beaded and Plain..	1¼ x 1 x 1	C
Beaded and Plain..	1¼ x 1 x 1¼	C
Beaded.....	1¼ x 1 x 1½	C
Beaded and Plain..	1¼ x 1¼ x ⅜	B
Beaded and Plain..	1¼ x 1¼ x ½	B
Beaded and Plain..	1¼ x 1¼ x ¾	C
Beaded and Plain..	1¼ x 1¼ x 1	C
Beaded and Plain..	1¼ x 1¼ x 1¼	C
Beaded and Plain..	1¼ x 1¼ x 1½	C
Beaded and Plain..	1¼ x 1¼ x 2	C
Beaded.....	1½ x ⅜ x 1½	B
Beaded and Plain..	1½ x ½ x 1½	B
Beaded.....	1½ x ¾ x 1¼	C
Beaded and Plain..	1½ x ¾ x 1½	C
Beaded.....	1½ x 1 x ¾	C
Beaded and Plain..	1½ x 1 x 1	C
Beaded.....	1½ x 1 x 1¼	C
Beaded and Plain..	1½ x 1 x 1½	C
Beaded.....	1½ x 1¼ x ¾	C
Beaded.....	1½ x 1¼ x 1	C
Beaded and Plain..	1½ x 1¼ x 1¼	C
Beaded and Plain..	1½ x 1¼ x 1½	C
Beaded.....	1½ x 1½ x ⅜	B
Beaded and Plain..	1½ x 1½ x ½	B
Beaded and Plain..	1½ x 1½ x ¾	C
Beaded and Plain..	1½ x 1½ x 1	C
Beaded and Plain..	1½ x 1½ x 1¼	C
Beaded and Plain..	1½ x 1½ x 1½	C
Beaded and Plain..	1½ x 1½ x 2	C
Beaded.....	2 x ⅜ x 2	B
Beaded and Plain..	2 x ½ x 2	B
Beaded and Plain..	2 x ¾ x 2	C
Beaded and Plain..	2 x 1 x 2	C
Beaded and Plain..	2 x 1¼ x 1¼	C
Beaded and Plain..	2 x 1¼ x 1½	C
Beaded and Plain..	2 x 1¼ x 2	C
Beaded.....	2 x 1½ x ¾	C
Beaded.....	2 x 1½ x 1	C
Beaded and Plain..	2 x 1½ x 1¼	C
Beaded and Plain..	2 x 1½ x 1½	C
Beaded and Plain..	2 x 1½ x 2	C
Beaded and Plain..	2 x 2 x ½	B
Beaded and Plain..	2 x 2 x ¾	C
Beaded and Plain..	2 x 2 x 1	C
Beaded and Plain..	2 x 2 x 1¼	C
Beaded and Plain..	2 x 2 x 1½	C
Beaded and Plain..	2 x 2 x 2	C
Beaded.....	2 x 2 x 2½	C
Beaded.....	2½ x 2½ x 1	C
Beaded.....	2½ x 2½ x 1¼	C
Beaded.....	2½ x 2½ x 1½	C
Beaded and Plain..	2½ x 2½ x 2	C
Beaded and Plain..	2½ x 2½ x 2½	C
Beaded.....	3 x 3 x 1	C
Beaded.....	3 x 3 x 1¼	C
Beaded and Plain..	3 x 3 x 1½	C
Beaded and Plain..	3 x 3 x 2	C
Beaded.....	3 x 3 x 2½	C
Beaded and Plain..	3 x 3 x 3	C
Beaded.....	3½ x 3½ x 2	C
Beaded.....	3½ x 3½ x 2½	C
Beaded.....	3½ x 3½ x 3	C
Beaded.....	3½ x 3½ x 3½	C
Beaded.....	4 x 4 x 2	C
Beaded.....	4 x 4 x 2½	C
Beaded.....	4 x 4 x 3	C
Beaded.....	4 x 4 x 3½	C
Beaded.....	4 x 4 x 4	C
Beaded.....	4½ x 4½ x 4½	C
Beaded.....	5 x 5 x 5	C
Beaded.....	6 x 6 x 6	C

Other sizes special.

All the above sizes can be furnished galvanized.

2½ and 3 inch Tees with 11½ threads per inch can be furnished at special prices.

For recommendations as to pressures see page 64.

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MALLEABLE IRON FITTING

STANDARD TEES

Fig. H-116

Fig. H-117

DROP TEES, FEMALE — Fig. H-116

	Size	Drop	Class
Plain	3/4 x 1/4 x 1/4		B
Plain	3/8 x 3/8 x 1/4		B
Plain	3/8 x 3/8 x 3/8		B
Plain	1/2 x 1/4 x 1/2		B
Plain	1/2 x 3/8 x 1/4		B
Plain	1/2 x 3/8 x 3/8		B
Plain	1/2 x 1/2 x 1/4		B
Plain	1/2 x 1/2 x 3/8		B
Plain	1/2 x 1/2 x 1/2		B
Plain	3/4 x 1/2 x 1/4		B
Plain	3/4 x 1/2 x 3/8		B
Plain	3/4 x 3/4 x 3/8		B
Plain	3/4 x 3/4 x 1/2		B
Plain	3/4 x 3/4 x 3/4		B
Plain	1 x 3/4 x 3/8		B
Plain	1 x 1 x 3/8		B
Plain	1 x 1 x 1/2		B
Plain	1 x 1 x 3/4		B
Plain	1 x 1 x 1		B

DROP TEES, MALE AND FEMALE — Fig. H-117

	Size	Drop	Class
Plain	1/4 x 1/4 x 3/8		B
Plain	3/8 x 1/4 x 3/8		B
Plain	3/8 x 3/8 x 3/8		B
Plain	1/2 x 3/8 x 3/8		B
Plain	1/2 x 1/2 x 3/8		B
Plain	3/4 x 1/2 x 3/8		B
Plain	3/4 x 3/4 x 3/8		B
Plain	1 x 3/4 x 3/8		B
Plain	1 x 1 x 3/8		B

Fig. H-118
With Drop 2½ Inches Long

LONG DROP TEES

	Size	Class
Plain	3/8 x 3/8 x 3/8	B

Other sizes special.
All the above sizes can be furnished galvanized.
For recommendations as to pressures see page 64.

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MALLEABLE IRON FITTINGS

STANDARD SERVICE TEES

Fig. H-119

Fig. H-120
With Male Branch

In reading Service Tees, the female end of the run is read first, then the male end, then the branch, as 1¼″ x ¾″ x 1¼″.

SERVICE TEES

	Size	Class		Size	Class
Beaded	½ x ½ x ½	B	Beaded	1½ x ¾ x 1½	C
Beaded	¾ x ¾ x ¾	B	Beaded	1½ x 1¼ x 1½	C
Beaded	1 x ¾ x 1	B	Beaded	1½ x 1 x 1½	C
Beaded	1 x 1 x 1	C	Beaded	1½ x 1½ x 1½	C
Beaded	1¼ x ¾ x 1¼	C	Beaded	2 x 1½ x 2	C
Beaded	1¼ x 1 x 1¼	C	Beaded	2 x 2 x 2	C
Beaded	1¼ x 1¼ x 1¼	C			

SERVICE TEES, WITH MALE BRANCH

	Size	Class
Plain	1″ Female x 1″ Female x 1″ Male	C
Plain	1″ " x 1″ " x ¾″ "	B
Plain	1¼″ " x 1¼ " x 1″ "	C

FOUR-WAY TEES

	Size	Class
Plain	⅜	B
Plain	½	B
Plain	¾	B
Plain	1	B
Plain	1¼	B
Plain	1½	B
Plain	2	B

Fig. H-121

Other sizes special.

All the above sizes can be furnished galvanized.

For recommendations as to pressures see page 64.

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MALLEABLE IRON FITTINGS

STANDARD CROSSES

Fig. H-122
Plain

Fig. H-123
Beaded

The outlets of a cross are always the same size, and both denoted by the last figure.

	Size	Class
Plain	1/4 x 1/4 x 1/4	B
Plain	3/8 x 1/4 x 1/4	B
Plain	3/8 x 3/8 x 1/4	B
Beaded and Plain	3/8 x 3/8 x 3/8	B
Plain	1/2 x 3/8 x 1/4	B
Plain	1/2 x 3/8 x 3/8	B
Plain	1/2 x 1/2 x 1/4	B
Beaded and Plain	1/2 x 1/2 x 3/8	B
Beaded and Plain	1/2 x 1/2 x 1/2	B
Plain	3/4 x 3/8 x 1/2	B
Plain	3/4 x 1/2 x 3/8	B
Plain	3/4 x 1/2 x 1/2	B
Beaded and Plain	3/4 x 3/4 x 3/8	B
Beaded and Plain	3/4 x 3/4 x 1/2	B
Beaded and Plain	3/4 x 3/4 x 3/4	B
Beaded and Plain	1 x 3/4 x 1/2	B
Beaded and Plain	1 x 3/4 x 3/4	B
Beaded and Plain	1 x 1 x 3/8	B
Beaded and Plain	1 x 1 x 1/2	B
Beaded and Plain	1 x 1 x 3/4	B
Beaded and Plain	1 x 1 x 1	B
Beaded	1 1/4 x 1 x 3/4	C
Beaded	1 1/4 x 1 x 1	C
Beaded	1 1/4 x 1 1/4 x 3/8	B

	Size	Class
Beaded and Plain	1 1/4 x 1 1/4 x 1/2	B
Beaded and Plain	1 1/4 x 1 1/4 x 3/4	C
Beaded and Plain	1 1/4 x 1 1/4 x 1	C
Beaded and Plain	1 1/4 x 1 1/4 x 1 1/4	C
Beaded	1 1/2 x 1 1/4 x 1 1/4	C
Beaded and Plain	1 1/2 x 1 1/2 x 3/4	C
Beaded and Plain	1 1/2 x 1 1/2 x 1	C
Beaded and Plain	1 1/2 x 1 1/2 x 1 1/4	C
Beaded and Plain	1 1/2 x 1 1/2 x 1 1/2	C
Beaded and Plain	2 x 2 x 1/2	B
Beaded and Plain	2 x 2 x 3/4	C
Beaded and Plain	2 x 2 x 1	C
Beaded and Plain	2 x 2 x 1 1/4	C
Beaded and Plain	2 x 2 x 1 1/2	C
Beaded and Plain	2 x 2 x 2	C
Beaded	2 1/2 x 2 1/2 x 1 1/2	C
Beaded	2 1/2 x 2 1/2 x 2	C
Beaded and Plain	2 1/2 x 2 1/2 x 2 1/2	C
Beaded	3 x 3 x 2	C
Beaded	3 x 3 x 2 1/2	C
Beaded and Plain	3 x 3 x 3	C
Beaded	3 1/2 x 3 1/2 x 3 1/2	C
Beaded	4 x 4 x 2	C
Beaded	4 x 4 x 4	C

Other sizes special.
All the above sizes can be furnished galvanized.
For recommendations as to pressures, see page 64.

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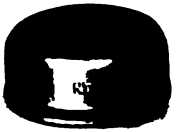
MALLEABLE IRON FITTINGS

STANDARD CAPS

Fig. H-124
Plain

Fig. H-125
Hexagon

Fig. H-126
Beaded



	Size	Class
Plain and Hexagonal	1/4	B
Plain	3/8	B
Plain	1/2	B
Plain and Beaded	3/4	B
Plain and Beaded	1	B
Plain and Beaded	1 1/4	C

	Size	Class
Plain and Beaded	1 1/2	C
Plain and Beaded	2	C
Plain and Beaded	2 1/2	C
Plain and Beaded	3	C
Beaded	3 1/2	C
Beaded	4	C

Fig. H-127
Plain

STANDARD REDUCERS

Fig. H-128
Beaded

	Size	Class
Plain	1/4 x 1/8	A
Plain	3/8 x 1/8	A
Beaded and Plain...	3/8 x 1/4	B
Plain	1/2 x 1/4	B
Beaded and Plain...	1/2 x 3/8	B
Plain	3/4 x 1/4	B
Plain	3/4 x 3/8	B
Beaded and Plain...	3/4 x 1/2	B
Plain	1 x 1/4	B
Plain	1 x 3/8	B
Plain	1 x 1/2	B
Beaded and Plain...	1 x 3/4	B
Beaded	1 1/4 x 1/4	B
Beaded and Plain...	1 1/4 x 3/8	B
Beaded and Plain...	1 1/4 x 1/2	B
Beaded and Plain...	1 1/4 x 3/4	C
Beaded and Plain...	1 1/4 x 1	C
Beaded and Plain...	1 1/2 x 3/8	B
Beaded and Plain...	1 1/2 x 1/2	B
Beaded and Plain...	1 1/2 x 3/4	C
Beaded and Plain...	1 1/2 x 1	C

	Size	Class
Beaded and Plain...	1 1/2 x 1 1/4	C
Beaded and Plain...	2 x 1/2	B
Beaded and Plain...	2 x 3/4	C
Beaded and Plain...	2 x 1	C
Beaded and Plain...	2 x 1 1/4	C
Beaded and Plain...	2 x 1 1/2	C
Beaded	2 1/2 x 1	C
Beaded	2 1/2 x 1 1/4	C
Beaded and Plain...	2 1/2 x 1 1/2	C
Beaded and Plain...	2 1/2 x 2	C
Beaded	3 x 1	C
Beaded	3 x 1 1/4	C
Beaded	3 x 1 1/2	C
Beaded and Plain...	3 x 2	C
Beaded and Plain...	3 x 2 1/2	C
Beaded	3 1/2 x 2 1/2	C
Beaded	3 1/2 x 3	C
Beaded	4 x 2	C
Beaded	4 x 2 1/2	C
Beaded	4 x 3	C
Beaded	4 x 3 1/2	C

Other sizes special. All the above sizes can be furnished galvanized.
For recommendations as to pressures, see page 64.

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MALLEABLE IRON FITTINGS

COUPLINGS — RIGHT HAND

Fig. H-129

Plain

	Size	Class		Size	Class
Plain	¼	B	Plain	1¼	C
Plain	⅜	B	Plain	1½	C
Plain	½	B	Plain	2	C
Plain	¾	B	Plain	2½	C
Plain	1	C	Plain	3	C

COUPLINGS — RIGHT AND LEFT

Fig. H-130

Plain — Ribbed

Fig. H-131

Beaded — Ribbed

	Size	Class		Size	Class
Plain	¼	B	Plain and Beaded	1¼	C
Plain	⅜	B	Plain and Beaded	1½	C
Plain and Beaded	½	B	Plain and Beaded	2	C
Plain and Beaded	¾	B	Plain	2½	C
Plain and Beaded	1	C	Plain	3	C

Other sizes special.

All the above sizes can be furnished galvanized.

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MALLEABLE IRON FITTINGS

COUPLINGS — HEXAGON

Fig. H-132

RIGHT AND LEFT

	Size	Class
Plain	1¼	C

LOCK NUTS

Fig. H-134
Round

Fig. H-133
Hexagonal

Fig. H-135
Hexagonal
With Raised Face

	Size	Class
Hexagonal	¼	B
Hexagonal	⅜	B
Hexagonal	½	B
Hexagonal and Round	¾	B
Hexagonal and Round	1	B
Hexagonal and Round	1¼	B
Hexagonal and Round	1½	C
Hexagonal and Round	2	C
Hexagonal	2½	C

Other sizes special.

All the above sizes can be furnished galvanized.

When hexagonal locknuts are ordered Fig. H-133 will be furnished in sizes ½″ and smaller and 2½″, and Fig. H-135 in other sizes.

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MALLEABLE IRON FITTINGS

WASTE NUTS

Fig. H-136

Size	Class	Size	Class
1/4	B	3/4	B
3/8	B	1	B
1/2	B	1 1/4	B

WALL PLATES

Fig. H-137

Size	Class
3/8	B

EXTENSION PIECES

Fig. H-138

Size	Class	Size	Class
3/8 x 3/8	B	3/4 x 3/4	B
1/2 x 1/2	B	1 x 1	B

Other sizes special.

All the above sizes can be furnished galvanized.

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MALLEABLE IRON FITTINGS

STANDARD RETURN BENDS

Fig. H-139

CLOSE PATTERN—Plain

Size	Dist. bet. Centers	Class	Size	Dist. bet. Centers	Class
½	1	B	1¼	1¾	C
¾	1¼	B	1½	2⅜	C
1	1½	B	2	2⅝	C

Fig. H-140

CLOSE PATTERN—Banded

Size	Dist. bet. Centers	Class	Size	Dist. bet. Centers	Class
¾	⅞	B	1½	2½	C
½	1⅛	B	2	2¾	C
¾	1⅜	B	2½	3⅞	C
1	1¾	B	3	4½	C
1¼	2⅛	C			

Other sizes special.

All the above sizes can be furnished galvanized.

For recommendations as to pressures see page 64.

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MALLEABLE IRON FITTINGS

STANDARD RETURN BENDS

Fig. H-141

MEDIUM PATTERN—Beaded

Size	Dist. bet. Centers	Class	Size	Dist. bet. Centers	Class
½	1¼	B	1¼	2¼	C
¾	1½	B	1½	2½	C
1	1⅞	B	2	3	C

Fig. H-142

OPEN PATTERN—Beaded

Size	Dist. bet. Centers	Class	Size	Dist. bet. Centers	Class
½	1½	B	1½	3½	C
¾	2	B	2	4	C
1	2½	B	2½	4½	C
1¼	3	C	3	5	C

Other sizes special.

All the above sizes can be furnished galvanized.

For recommendations as to pressures see page 64.

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MALLEABLE IRON FITTINGS

STANDARD Y BRANCHES

Fig. H-143
Plain

Fig. H-144
Reducing Plain

	Size	Class
Beaded	½	B
Beaded	¾	B
Beaded	1	B
Beaded and Plain	1¼	B
Beaded and Plain	1½	B
Beaded and Plain	1½ x 1¼	B
Beaded and Plain	2	B
Beaded and Plain	2x1½x1½	B

	Size	Class
Beaded and Plain	2x1¼	B
Beaded and Plain	2x1½	B
Plain	2x1½x2	B
Beaded and Plain	2½	B
Plain	2½x2x2	B
Beaded and Plain	2½x2	B
Beaded	3	B
Beaded	3x2½	B

60° Y BRANCHES

Fig H-145

	Size	Class
Plain	1¼	B
Plain	1½	B
Plain	2	B

	Size	Class
Plain	2x1½x2	B
Plain	2x1½	B
Plain	2½x2x2	B

Other sizes special
All the above sizes can be furnished galvanized.
For recommendations as to pressures see page 64.

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MALLEABLE IRON FITTINGS

STANDARD DOUBLE Y BRANCHES

Fig. H-146
Plain

Fig. H-147
Beaded

	Size	Class		Size	Class
Beaded	1½	B	Plain	2 x1½	B
Plain and Beaded	2	B	Plain	2½x2x2	B

STANDARD PARALLEL Y BRANCHES

Fig. H-148

	Size
Banded	2
Banded	2x1½x1½
Banded	2x1½

Prices on application.
All the above sizes can be furnished galvanized.
For recommendations as to pressures see page 64.

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MALLEABLE IRON FITTINGS

CHANDELIER HOOKS

Fig. H-149
Male

Fig. H-150
Female

Size	Class	Size	Class
⅜	B	⅜	B
½	B	½	B

CHANDELIER LOOPS

Fig. H-151
Male

Fig. H-152
Female

Size	Class	Size	Class
⅜	B	⅜	B
½	B		

Other sizes special.
All the above sizes can be furnished galvanized.

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MALLEABLE IRON FITTINGS

CROSS-OVERS

Fig. H-153

Size.....inches	½	¾	1
Black.....each	.20	.30	.45
Galvanized..... "	.25	.40	.60

CROSS-OVERS—BACK OUTLET

Fig. H-154

Size, including outlets.....inches	½	¾	1
Black.....each	.23	.38	.55
Galvanized..... "	.30	.50	.75

OFFSET REDUCING COUPLINGS

Fig. H-155

Size.....inches	1x¾	1¼x1	1½x1¼	2x1½	2½x2	3x2½	3½x3	4x3½
Each.....	.60	.70	.90	1.10	1.80	2.50	3.00	4.00

Other sizes special.
All the above sizes can be furnished galvanized.

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MALLEABLE IRON FITTINGS

HYDRANT HANDLES

Fig. H-156
No. 1

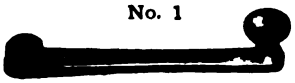

Fig. H-157
No. 2

No. 1.	For ⅜ square rod, Fig. H-156.....per pound	.15
No. 2.	For ⅜ in. pipe, Fig. H-157..... "	.20

STREET WASHER KEYS

Fig. H-158
Malleable Iron

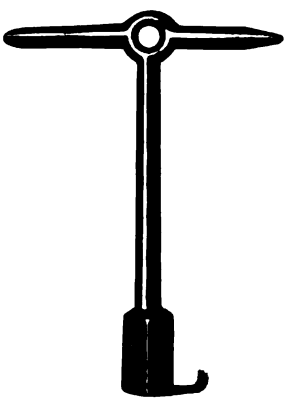

Fig. H-159
Cast Iron

Malleable for ⅜ and ½ inch square rod, Fig. H-158.....per pound		.15
Cast iron for ⅝ square rod, Fig. H-159..... "		.15

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MALLEABLE IRON FITTINGS

HYDRANT CLAMPS

Fig. H-160
For Square Rod

Fig. H-161
For Pipe

Size of Cocks.....inches	½	⅝	¾	1
For ⅜, ½ or 7/16 square rod, Fig. H-160...per pound	.15	.15	.15	.15
Tapped for ⅜-inch pipe, Fig. H-161..... " "	.18	.18	.18	.18
Tapped for ½-inch pipe, Fig. H-161..... " "	.20	.20	.20	.20

WRENCHES

For Steam and Gas Cocks

Fig. H-162
Square Head

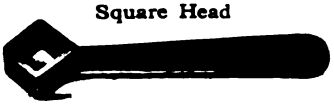

Fig. H-163
Flat Head

Size of Cock.....inches	⅜	½	¾	1	1¼	1½	2
Square Head, steam, Fig. H-162	.06	.07	.09	.14	.19	.25	.44
Square Head, gas, Fig. H-162	....	.07	.09	.14	.19	.25	.44
Flat Head, steam, Fig. H-163	....	.07	.09	.14	.25	.44	.56
Flat Head, gas, Fig. H-163....	....	.07	.09	.14	.25	.44	.56

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MALLEABLE IRON FITTINGS

RAILING FITTINGS

Fig. H-164

No. 1

Fig. H-165

No. 2

Fig. H-166

No. 3

Fig. H-167

No. 4

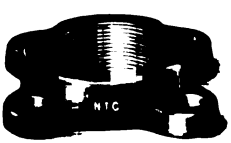
Fig. H-168

No. 5

Fig. H-169

No. 6

Fig. H-170



No. 7

Fig. H-171

No. 8

Fig. H-172

No. 9

In ordering, please describe kind wanted by number and size.

For brass railing fittings, see brass fittings section.

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MALLEABLE IRON FITTINGS

RAILING FITTINGS — CONTINUED

(Sizes ½-Inch to 2-Inch Inclusive)

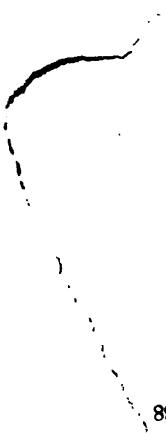
Price per pound, black ..... .14
Price per pound, galvanized ..... .21

Railing Fittings are always sent with all openings tapped R. H. unless otherwise specified.

An advance of 15% will be charged for fittings tapped Right and Left or Left Hand.

When required with Right and Left hand threads fully describe which opening or openings are wanted right hand and which left hand.

On orders for railing flanges, No. 7, Fig. H-170, will be furnished when not otherwise specified.



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MALLEABLE IRON FITTINGS

BUSHINGS

Fig. H-173

REDUCING ONE SIZE ONLY

Size.....inches	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Each.....	.04	.04	.04	.05	.06	.07	.09	.14	.21
Galvanized.....each	.08	.08	.08	.10	.12	.14	.18	.28	.42

FACED BUSHINGS

Fig. H-174

Size.....inches	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Each.....	.08	.09	.11	.13	.17	.22	.32
Size.....inches	2 1/2	3	3 1/2	4	4 1/2	5	6
Each.....	.48	.70	1.20	1.50	2.10	2.60	3.75

R. AND L. NIPPLES—HEXAGON CENTER

Fig. H-175

Size.....inches	1/2	3/4	1	1 1/4	1 1/2	2
Each.....	.20	.25	.30	.40	.50	.70

Double list for galvanized R. and L. nipples.

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MALLEABLE UNIONS

The [redacted] line of Malleable Unions were carefully designed and are suitable for hard service.

The metal at the working parts is thick, particular attention being called to the heavy solid ring supplied on all Malleable Iron Unions.

Inasmuch as any union must always be disconnected by the use of the ring, special care has been taken to make this part sufficiently heavy to withstand the most severe service.

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MALLEABLE IRON FITTINGS

STANDARD MALLEABLE IRON UNIONS

Fig. H-176
Female

Fig. H-177
Male and Female

Size.....inches	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Fig. H-176.....each	.18	.18	.20	.22	.27	.33	.46	.58	.75	1.55	2.10	3.65	4.35
Galvanized..... "	.27	.27	.30	.33	.40	.50	.70	.90	1.15	2.35	3.15	5.50	6.50
Fig. H-177, Male & Female "	.18	.18	.20	.22	.27	.33	.46	.58	.75	1.55	2.10	3.65	4.35
Galvanized..... "	.27	.27	.30	.33	.40	.50	.70	.90	1.15	2.35	3.15	5.50	6.50

TWO-THIRD UNIONS

Fig. H-178

Size.....inches	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Black.....each	.12	.12	.14	.16	.19	.22	.30	.40	.50	1.00	1.40	2.40	3.00
Galvanized..... "	.18	.18	.20	.22	.25	.35	.50	.60	.75	1.60	2.10	3.70	4.35

For recommendations as to pressures see page 64.

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MALLEABLE IRON FITTINGS

STANDARD UNION ELBOWS

Fig. H-179
With Female Union

Fig. H-180
With Male Union

Size ..... inches	½	¾	1	1¼	1½	2	2½
With Female Union, Fig. H-179, each	.42	.54	.63	.90	1.05	1.55	2.85
With Female Union, Galvanized "	.63	.81	.95	1.35	1.58	2.35	4.30
With Male Union, Fig. H-180... "	.48	.62	.72	1.05	1.20	1.80	3.30
With Male Union, Galvanized .. "	.72	.93	1.08	1.60	1.80	2.70	4.95

Female union ells furnished when neither male nor female are specified.

STANDARD UNION TEES

Fig. H-181
With Female Union

Fig. H-182
With Male Union

Size ..... inches	½	¾	1	1¼	1½	2	2½
With Female Union, Fig. H-181, each	.45	.57	.70	.95	1.15	1.70	3.20
With Female Union, Galvanized "	.68	.86	1.05	1.45	1.75	2.55	4.80
With Male Union, Fig. H-182... "	.52	.65	.80	1.10	1.30	1.95	3.70
With Male Union, Galvanized .. "	.78	1.00	1.20	1.65	1.95	2.95	5.55

Female union tees furnished when neither male or female are specified.
For recommendations as to pressures see page 64.

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MALLEABLE IRON FITTINGS

CIRCULATING BOILER FITTINGS

Galvanized

Fig. H-183

No. 1

Fig. H-184

No. 2

Fig. H-185

No. 3

Fig. H-186

No. 4

Size.....inches	Female Male ¾ x ¾ x 1	Female Male ¾ x ½ x 1	Female Male ½ x ½ x 1
No. 1. Boiler Elbows..... ea.	.40	.40	.40
No. 2. Boiler Elbows, with Union.. "	.75	.75	.60
No. 3. Boiler Coupling..... "	.40	.40	.40
No. 4. Boiler Coupling, with Union "	.75	.75	.60

These fittings are read in the following order: First, the female end; next, the internal thread of the male end; and last, the external thread of the male end.

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MALLEABLE IRON FITTINGS

Fig. H-187

STANDARD MALLEABLE FLANGE UNIONS

Suitable for Steam Working Pressures up to 125 Pounds

Size.....inches	¾	1	1¼	1½	2	2½	3
Diam. of Flange	3 1/8	3¾	4 1/8	4 5/8	5 1/4	6	6¼
Number of Bolts	3	4	4	4	4	4	4
Black.....each	1.40	1.60	2.00	2.50	3.00	3.50	4.40
Galvanized..... "	2.80	3.20	4.00	5.00	6.00	7.00	8.80

Size.....inches	3½	4	4½	5	6	8	....
Diam. of Flange	7 3/8	8 1/8	8¾	9 5/16	10¾	13 1/8	....
Number of Bolts	4	5	5	5	6	8	....
Black.....each	5.25	6.00	7.00	8.00	9.00	18.00	....
Galvanized..... "	10.50	12.00	14.00	16.00	18.00	36.00	....

Malleable flange unions are always furnished faced and without gaskets.

EXTRA HEAVY HYDRAULIC MALLEABLE FLANGE UNIONS

Suitable for Cold Water Working Pressures up to 800 Pounds

(See foot-note)

Fig. H-188

Size.....inches	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4
Each	1.35	1.35	1.50	1.50	1.50	1.75	2.25	3.00	6.00	9.00	11.50	14.00
Largest Outside Diameter	3	3 3/8	3½	3¼	3 7/8	4½	5	5¾	6¾	7 7/8	8 7/8	9 5/8
No. of Bolts	2	2	2	4	4	4	4	4	4	4	4	6

Hydraulic malleable flange unions always furnished with tongued and grooved faces and without gaskets.

Cast iron flange unions will be found in cast iron fittings section.

These extra heavy hydraulic malleable flange unions are of the same class as the hydraulic malleable fittings listed on the following pages and while they are ordinarily recommended for working pressures up to 800 pounds, they are often used for considerably higher pressures, especially in the smaller sizes. When unions are ordered for pressures greater than 800 pounds, the working pressures should be specifically stated.

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MALLEABLE IRON FITTINGS

EXTRA HEAVY ELBOWS AND TEES

Suitable for Steam Working Pressures up to 250 Pounds

Fig. H-189

Fig. H-191

Size.....inches	¼	⅜	½	¾	1	1¼	1½	2
Elbows Fig. H.-189...each	.20	.25	.30	.35	.40	.55	.70	.90
Elbows, Long Radius No. H-190 "	....	....	....	....	.64	.80	1.10	1.60
Tees Fig. H-191..... "	.30	.40	.45	.50	.60	.80	1.05	1.35
Size.....inches	2½	3	3½	4	5	6	7	8
Elbows Fig. H.-189...each	1.50	2.40	3.25	4.25	6.50	9.50	18.50	22.50
Elbows, Long Radius No. H-190 "	2.40	4.50	6.50	7.00	13.00	17.50	.....	.....
Tees Fig. H-191..... "	2.25	3.60	5.00	6.50	9.75	14.25	25.00	31.00

EXTRA HEAVY 45° ELLS

Fig. H-192

Size.....inches	¼	⅜	½	¾	1	1¼	1½	2
Each.....	.25	.30	.35	.42	.50	.65	.85	1.10
Size.....inches	2½	3	3½	4	5	6	7	8
Each.....	1.85	2.85	4.00	5.00	7.50	10.50	19.50	24.00

We can furnish reducing ells, tees and crosses according to lists of regular sizes of standard cast iron fittings, shown in cast iron fittings section, at an additional charge.

These fittings can be furnished galvanized if desired, at an advance of 50 per cent over the lists applying to black.

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MALLEABLE IRON FITTINGS

EXTRA HEAVY CROSSES

Suitable for Steam Working Pressures up to 250 Pounds

Fig. H-193

Size .....inches	¼	⅜	½	¾	1	1¼	1½	2
Price .....each	.60	.80	.90	1.00	1.20	1.60	2.10	2.70
Size .....inches	2½	3	3½	4	5	6	7	8
Price.....each	4.50	7.20	10.00	13.00	19.50	28.50	37.50	46.50

We can furnish reducing ells, tees, and crosses, according to lists of regular sizes of standard cast iron fittings, shown in cast iron fittings section, at an additional charge.

These fittings can be furnished galvanized if desired at an advance of 50 per cent over the lists applying to black.

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MALLEABLE IRON FITTINGS

EXTRA HEAVY HYDRAULIC FITTINGS

Suitable for Cold Water Working Pressures up to 800 Pounds

Fig. H-194
Ell

Fig. H-195
Tee

Size.....inches	¼	⅜	½	¾	1	1¼	1½	2
Elbows, Fig. H-194...	.20	.25	.30	.35	.40	.55	.70	.90
Tees, Fig. H-195.....	.30	.40	.45	.50	.60	.80	1.05	1.35
Size.....inches	2½	3	3½	4	5	6	7	8
Elbows, Fig. H-194...	1.50	2.40	3.25	4.25	6.50	9.50	18.50	22.50
Tees, Fig. H-195.....	2.25	3.60	5.00	6.50	9.75	14.25	25.00	31.00

These fittings are tested to 2,000 pounds cold water pressure, and while they are ordinarily recommended for working pressures up to 800 pounds, the smaller sizes are often used for considerably higher pressures.

When fittings are ordered for pressures greater than 800 pounds, the working pressure should be specifically stated.

The demand for reducing sizes has not been sufficient to warrant us in making reducing patterns, but if required, we can furnish them at special prices which will be quoted on application.

These fittings can be furnished galvanized at an advance of 50 per cent over the lists applying to black fittings.

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MALLEABLE IRON FITTINGS

WATER PIPE CLAMPS

For Standard Wrought Pipe, Cast Iron Pipe and Casing

Fig. H-196

Number	Clamps will Fit				Size of Wrought Pipe Connections Pipe Clamps are Tapped for inches	Price Each	Number	Clamps will Fit				Size of Wrought Pipe Connections Pipe Clamps are Tapped for inches	Price Each
	Outside Diameter of Circle ins.	Size Wrought Pipe inches	Size Outside Diameter of Casing ins.	Size Cast Iron Pipe ins.				Outside Diameter of Circle ins.	Size Wrought Pipe inches	Size Outside Diameter of Casing ins.	Size Cast Iron Pipe ins.		
0	1 7/8	1 1/2	2	..	1/2 and 3/4	1.00	19	6 5/8	6	6 5/8	..	3/4 to 1 1/2	2.25
1	2 3/8	2	2 1/2	..	1/2 to 1 1/4	1.00	20	6 5/8	6	6 5/8	..	2	2.50
2	2 7/8	2 1/2	2 3/4 and 3	2	1 to 1 1/4	1 25	21	6 5/8	6	6 5/8	..	3	5.00
3	3 1/2	3	3 1/2	..	3/4 and 1	1.25	22	7	..	7	6	3/4 to 1 1/2	2.50
4	3 1/2	3	3 1/2	..	1 1/4 to 2	1.50	23	7	..	7	6	2	2.70
5	4	3 1/2	4	3	3/4 to 1	1.50	24	7	..	7	6	3	5.00
6	4	3 1/2	4	3	1 1/4 to 2	1.75	25	7 5/8	7	7 5/8	..	3/4 to 1 1/2	2.50
7	4 1/2	4	4 1/2	..	3/4 to 1 1/2	1.75	26	7 5/8	7	7 5/8	..	2	2.70
8	4 1/2	4	4 1/2	..	2	2.00	27	7 5/8	7	7 5/8	..	3	5.00
9	4 1/2	4	4 1/2	..	3	4.00	28	8	..	8	7	3/4 to 1 1/2	4.50
10	5	4 1/2	5	4	3/4 to 1 1/2	1.80	29	8	..	8	7	2	5.00
11	5	4 1/2	5	4	2	2.15	30	8	..	8	7	3	5.50
12	5	4 1/2	5	4	3	4.00	30 1/2	8 5/8	8	8 5/8	..	3/4 to 1 1/2	5.50
13	5 1/2	5	5 1/2	..	3/4 to 1 1/2	1.80	31	8 5/8	8	8 5/8	..	2 to 3	5.50
14	5 1/2	5	5 1/2	..	2	2.15	32	8 5/8	8	8 5/8	..	4	6.00
15	5 1/2	5	5 1/2	..	3	4.00	33	9 5/8	9	...	..	1 1/2 to 3	8.00
16	6	...	6	5	3/4 to 1 1/2	2.00	34	10	..	10	9	3/4 to 2	9.00
17	6	...	6	5	2	2.40	35	10 3/4	10	...	..	3/4 to 2	9.00
18	6	...	6	5	3	4.50	36	12 3/4	12	...	..	3/4 to 2	10.00

Always order water pipe clamps by number.

The above table shows the different kinds and sizes of pipe which each clamp will fit.

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MALLEABLE IRON FITTINGS

STEAM PIPE SADDLES

With Double Wrought Straps
For Wrought Pipe, Casing or Cast Iron Pipe

Fig. H-197

Fig. H-197. FOR WROUGHT PIPE

Size of Pipe.....inches	1½	2	2½	3	3½	4	4½	5	5	6
Tapped for Pipe..inches	½ & ¾	½ to 1½	¾ to 1½	¾ to 2	¾ to 2	¾ to 2	¾ to 2	¾ to 2	2½ & 3	¾ to 2
Price.....each	.90	1.00	1.25	1.25	1.40	1.50	2.50	2.75	2.75	2.75
Size of Pipe.....inches	6	7	8	9	10	10	12	12	15	16
Tapped for Pipe..inches	2½ to 4	1 to 4	1 to 4	1½ to 4	1½ to 4	4½ to 6	1½ to 4	4½ to 6	3 to 6	3 to 6
Price.....each	5.75	6.50	6.50	8.50	10.00	10.00	14.00	14.00	22.00	25.00

No. H-197A. FOR CAST IRON PIPE

Size of Pipe.....inches	3	4	6	8
Tapped for Pipe.....inches	1¼	1¼ to 2	1½ to 4	4
Price.....each	1.40	2.50	6.50	8.50

No. H-197B. FOR CASING

I. D. Size of Casing, Nominal.....inches	3¾	4¼	4¾	5⅝	5⅝
O. D. Size of Casing.....inches	4	5	5	6	6
Tapped for Pipe..... "	1	1½	2	1½	2
Price.....each	1.40	2.50	2.50	2.75	2.75

The saddle of these clamps is made from malleable iron and carefully designed to insure great strength under severe strains.

These fittings have been very extensively used for oil and gas service. They are also suitable for steam, water and air service.

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MALLEABLE IRON FITTINGS

STANDARD SERVICE CLAMPS—National Pattern

Fig. H-198

For Converse and Matheson Joint Pipe, Standard Wrought Pipe, Casing and Cast Iron Pipe

Fig. H-199

Diam. of Clamps Inches	Size of Converse and Matheson Joint Pipe, Inches	Size Wrought Pipe Inches	Size Outside Diam. of Casing, Inches	Size Cast Iron Pipe Inches	Size of Wrought Pipe Connections Clamps are Tapped for, Inches	Number of Straps	Price, Each
2	2	1½	....	..	½ to 1	1	Prices on Application
2⅜	..	2	2¼, 2½	..	½ " 1	1	
2⅞	3	2½	2¾, 3	..	½ " 1¼	1	
3½	..	3	3¼, 3½	..	½ " 2	1	
4	4	3½	3¾, 4	3	½ " 2½	1	
4½	..	4	4¼, 4½	..	½ " 2½	1	
5	5	4½	4¾, 5	4	½ " 2½	1	
5	5	4½	4¾, 5	4	3 " 2½	2	
5½	..	5	5¼, 5½	..	½ " 2½	1	
5½	..	5	5¼, 5½	..	3 " 2	2	
6	6	....	6	5	½ " 2½	1	
6	6	....	6	5	3 " 3½	2	
6⅝	..	6	6⅝	..	½ " 2½	1	
6⅝	..	6	6⅝	..	3 " 3½	2	
7	7	....	7	6	¾ " 2½	1	
7	7	....	7	6	3 " 4	2	
7⅝	..	7	7⅝	..	¾ " 2½	1	
7⅝	..	7	7⅝	..	3 " 4	2	
8	8	....	8	7	¾ " 2½	1	
8	8	....	8	7	3 " 4½	2	
8⅝	..	8	8⅝	..	¾ " 2½	1	
8⅝	..	8	8⅝	..	3 " 4½	2	
9	9	....	9	..	¾ " 2½	1	
9	9	....	9	..	3 " 4½	2	

Diam. of Clamps Inches	Size of Converse and Matheson Joint Pipe, Inches	Size Wrought Pipe Inches	Size Outside Diam. of Casing, Inches	Size Cast Iron Pipe Inches	Size of Wrought Pipe Connections Clamps are Tapped for, Inches	Number of Straps	Price, Each
9⅝	..	9	..	8	¾ to 2½	1	Prices on Application
9⅝	..	9	..	8	3 " 4½	2	
10	10	..	10	..	¾ " 2½	1	
10	10	..	10	..	3 " 5	2	
10¾	..	10	..	9	¾ " 2½	1	
10¾	..	10	..	9	3 " 5	2	
11	11	..	11	..	¾ " 2½	1	
11	11	..	11	..	3 " 5	2	
11¾	..	11	..	10	¾ " 2½	1	
11¾	..	11	..	10	3 " 5	2	
12	12	..	12	..	¾ " 2½	1	
12	12	..	12	..	3 " 6	2	
12¾	..	12	..	..	¾ " 2½	1	
12¾	..	12	..	..	3 " 6	2	
13	..	..	13	..	¾ " 2½	1	
13	.	..	13	..	3 " 6	2	
14	14	O. D. 14	14	12	¾ " 2½	1	
14	14	" 14	14	12	3 " 6	2	
15	15	" 15	15	..	¾ " 2½	1	
15	15	" 15	15	..	3 " 6	2	
16	16	" 16	16	14	¾ " 2½	1	
16	16	" 16	16	14	3 " 6	2	
18	18	" 18	..	16	3 " 6	2	
20	20	" 20	..	18	3 " 6	2	

The construction of these clamps is such that they can be used when it is necessary to tap a main under pressure. The cock shown in cut is used in tapping a main under pressure, but is not furnished with clamp.

The above table shows the different kinds and sizes of pipe which each clamp will fit.

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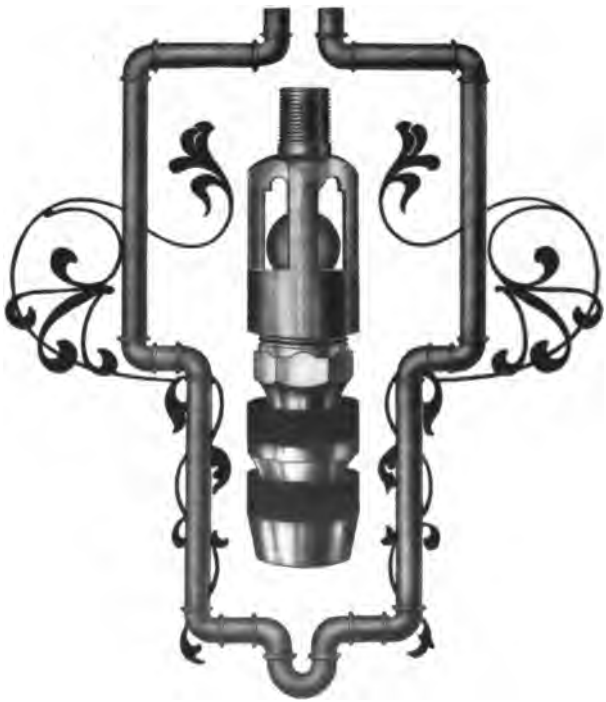

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"KEWANEE" UNIONS
AND
"KEWANEE" SPECIALTIES

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"KEWANEE" UNIONS AND "KEWANEE" SPECIALTIES

(Patented)

In the succeeding pages is shown our line of "Kewanee" Unions and "Kewanee" Specialties; the advantages peculiar to the "Kewanee" Union are the following:

(*a.*) Brass to iron thread connection — same will not corrode, and the union can be disconnected and re-connected an indefinite number of times without injury.

(*b.*) The "Kewanee" Union has three solid parts. There are no inserted pieces.

(*c.*) Brass to iron ball joint seat — the necessity for a gasket is obviated, and the junction of the two metals insures a better joint than one made of the same metal.

(*d.*) Every union is carefully tested with compressed air under water; the slightest leak shows in the form of a bubble, and the union is summarily rejected. There are no "seconds."

(*e.*) The brass part of each union has a very substantial scrap value.

Besides the "Kewanee" Union are shown a number of specialties, all having the fundamental "Kewanee" principle; i. e., brass to iron thread connection and brass to iron ball joint seat. This same principle has been applied to valves, and any brass valve we manufacture can be furnished in this way. Will quote prices upon application on any "Kewanee" Union valves not herein listed.

The "Kewanee" Union and "Kewanee" Specialties have met with great success since their introduction. In the future the same high standard of workmanship, rigid inspection, and test which have characterized them in the past will be maintained.

To those who are already users of "Kewanee" Specialties little need be said; their merits have been tested and tried. From those, however, who have never used them, we request only a trial order; we are confident the goods once in actual service will warrant their continued use.

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"KEWANEE" UNIONS--OCTAGON PATTERN

"KEWANEE" COMBINATION BRASS AND IRON GROUND BALL JOINT

(Patented)

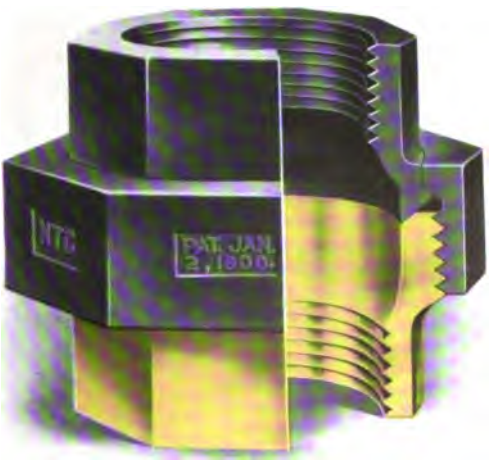
Non-corrosive Thread Connection

Each Union Tested with Extreme Air Pressure Under Water

No Gasket Required

Suitable for Steam Working Pressures up to 200 Pounds

Fig. H-300



"The Union with no Inserted Parts"

Size .....inches	1/8	1/4	3/8	1/2	3/4	1	1 1/4
Black .....each	18	.19	.22	.27	.40	.48	.66
Galvanized..... "	22	.23	.26	.34	.49	.60	.82
Size .....inches	1 1/2	2	2 1/2	3	3 1/2	4	....
Black .....each	.80	1.14	2.10	2.65	4.30	5.50	....
Galvanized..... "	1.10	1.40	2.75	3.50	6.30	7.50	....

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"KEWANEE" UNIONS—ROUND END PATTERN

"KEWANEE" COMBINATION BRASS AND IRON GROUND BALL JOINT

(Patented)

Non-corrosive Thread Connection

Each Union Tested with Extreme Air Pressure Under Water

No Gasket Required

Suitable for Steam Working Pressures up to 200 Pounds

Fig. H-301

"The Union with no Inserted Parts"

Fig. H-302

FEMALE

"The Union with no Inserted Parts"

Size.....inches	1/8	1/4	3/8	1/2	3/4	1	1 1/4
Black.....each	.18	.19	.22	.27	.40	.48	.66
Galvanized..... "	.22	.23	.26	.34	.49	.60	.82
Size.....inches	1 1/2	2	2 1/2	3	3 1/2	4	.....
Black.....each	.80	1.14	2.10	2.65	4.30	5.50	.....
Galvanized..... "	1.10	1.40	2.75	3.50	6.30	7.50	.....

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"KEWANEE" UNIONS HEXAGON PATTERN

"KEWANEE" COMBINATION BRASS AND IRON GROUND BALL JOINT

(Patented)

Non-corrosive Thread Connection

Each Union Tested With Extreme Air Pressure Under Water

No Gasket Required

Suitable for Steam Working Pressures up to 200 Pounds

Fig. H-303

"The Union with no Inserted Parts"

Size.....inches	1/8	1/4	3/8	1/2	3/4	1	1 1/4
Black.....each	.18	.19	.22	.27	.40	.48	.66
Galvanized..... "	.22	.23	.26	.34	.49	.60	.82
Size.....inches	1 1/2	2	2 1/2	3	3 1/2	4	....
Black.....each	.80	1.14	2.10	2.65	4.30	5.50	....
Galvanized..... "	1.10	1.40	2.75	3.50	6.30	7.50	....

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"KEWANEE" UNIONS—ECCENTRIC PATTERN

"KEWANEE" COMBINATION BRASS AND IRON GROUND BALL JOINT

(Patented)

Non-corrosive Thread Connection

Each Union Tested with Extreme Air Pressure Under Water

No Gasket Required

Suitable for Steam Working Pressures up to 200 pounds

Fig. H-304

"The Union with no Inserted Parts"

The use of this union insures perfect drainage in pipe lines of varying diameter. Easily disconnected at any time.

Inches	Price	Inches	Price
¾ x ⅜	.35	2 x 1½	1.30
¾ x ½	.40	2½ x 1¼	2.10
1 x ½	.50	2½ x 1½	2.25
1 x ¾	.50	2½ x 2	2.20
1¼ x ¾	.75	3 x 2	2.50
1¼ x 1	.80	3 x 2½	2.65
1½ x 1	.80	3½ x 2	4.15
1½ x 1¼	.85	4 x 2½	5.55
2 x 1¼	1.25	4 x 3	5.80

Other sizes can be furnished to order.

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"KEWANEE" UNIONS—MALE AND FEMALE PATTERN

"KEWANEE" COMBINATION BRASS AND IRON GROUND BALL JOINT

(Patented)

Non-corrosive Thread Connection

Each Union Tested with Extreme Air Pressure Under Water

No Gasket Required

Suitable for Steam Working Pressures up to 200 Pounds

Fig. H-305

Fig. H-306

"The Union with no Inserted Parts"

Size ..... inches	1/8	1/4	3/8	1/2	3/4	1
Black ..... each	.18	.19	.22	.27	.40	.48
Galvanized ..... "	.22	.23	.26	.34	.49	.60
Size ..... inches	1 1/4	1 1/2	2	2 1/2	3	....
Black ..... each	.66	.80	1.14	2.10	2.65	....
Galvanized ..... "	.82	1.10	1.40	2.75	3.50	....

These unions are especially valuable for making connections in close quarters.

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"KEWANEE" HOSE UNIONS

"KEWANEE" COMBINATION BRASS AND IRON GROUND BALL JOINT

(Patented)

Non-Corrosive Thread Connection

Each Union Tested with Extreme Air Pressure Under Water

No Gasket Required

Fig. H-307

"The Union with no Inserted Parts"

Size, inches	¾	1
Each	.40	.48

This union is of the same general design as Fig. H-306, with the exception that it has a long malleable tail-piece for hose connection. These unions are proving very popular in mine and railroad work.

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"KEWANEE" AIR DRILL UNIONS

"KEWANEE" COMBINATION BRASS AND IRON GROUND BALL JOINT

(Patented)

Non-corrosive Thread Connection

Each Union Tested with Extreme Air Pressure Under Water

No Gasket Required

Suitable for Air Working Pressures up to 200 Pounds

Fig. H-308

"The Union with no Inserted Parts"

Size, inches	¾	1
Each	.40	.48

This Union is similar to regular male and female "Kewanee" Union, Fig. H-306, with the exception that the brass head has a male thread for use in connection with air drills. Admirably suited for mine work.

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"KEWANEE" AIR PUMP UNIONS

"KEWANEE" COMBINATION BRASS AND IRON GROUND BALL JOINT

(Patented)

Non-corrosive Thread Connection
Each Union Tested with Extreme Air Pressure Under Water
No Gasket Required
Suitable for Air Working Pressure up to 200 Pounds

Fig. H-309

"The Union with no Inserted Parts"

Size ..... inches	$1\frac{1}{4}$x1	$1\frac{1}{2}$x$1\frac{1}{4}$	2x$1\frac{1}{2}$
Each	1.20	1.50	2.00

In designating sizes on the above union the male end is read first. Example: $1\frac{1}{2}$ (male) x $1\frac{1}{4}$ (female).

As the name signifies, these unions make excellent connections for air pumps. They are used extensively on the air pumps of locomotives and are giving eminent satisfaction in this service.

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"KEWANEE" UNIONS — EXTRA HEAVY PATTERN

"KEWANEE" COMBINATION BRASS AND IRON GROUND BALL JOINT

(Patented)

Non-corrosive Thread Connection
Each Union Tested with Extreme Air Pressure Under Water
No Gasket Required
Suitable for Steam Working Pressures up to 250 Pounds

Fig. H-310

"The Union with no Inserted Parts"

Size, inches	½	¾	1	1¼	1½	2	2½	3
Each	.75	.90	1.10	1.50	1.75	2.50	3.75	5.00

These unions are made very heavy and strong, and are giving satisfaction where exceptionally hard service is encountered.

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"KEWANEE" FLANGE UNIONS

(Patented)

Fig. H-311

"Kewanee" Flange Union is tight even when pipe alignment is imperfect

The "Kewanee" Flange Union is the result of careful study and experiment to produce a flange union which can always be made tight and remain so without the use of a gasket.

These Flange Unions are made entirely of the highest grade malleable iron, excepting the brass seat, which is made practically integral with the malleable part by the only method which experience has shown to be enduring. This construction gives a very compact fitting, light in weight, and at the same time, one that combines extreme strength with rigidity; there is no danger of breaking these malleable flanges in pulling the joints together.

Cast Iron Flanges, on the contrary, are easily broken in coupling.

The convex surface of malleable comes in contact with the concave surface of brass; this junction of hard and soft metals insures a more perfect seat than could be obtained otherwise —it makes no difference whether the pipe alignment is straight or not. Each fitting is given a severe air pressure test under water and if not absolutely tight is rejected—there are no seconds.

For price list on "Kewanee" Flange Unions, see next page.

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"KEWANEE" FLANGE UNIONS

BRASS AND MALLEABLE IRON SELF-SEATING BALL JOINT

(Patented)

No Gasket Required
Each Union Tested with Air Pressure Under Water
Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-312

Fig. H-313
Sectional View

Note Brass Seat Screwed In

Size .....inches	1	1¼	1½	2	2½	3	3½	4
Black.....each	.80	1.20	1.60	2.00	3.20	4.80	6.00	7.50
Galvanized..... "	1.20	1.80	2.40	3.00	4.80	7.20	9.00	11.25
Size .....inches	4½	5	6	7	8	9	10	.....
Black.....each	8.75	10.00	12.50	15.00	18.00	21.60	28.80	.....
Galvanized..... "	13.00	15.00	18.75	22.50	27.00	32.40	43.20	.....

NOTE.—For description, see preceding page.

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"KEWANEE" UNION ELLS
"KEWANEE" COMBINATION BRASS AND IRON GROUND BALL JOINT

(Patented)

Non-corrosive Thread Connection
Each Fitting Tested with Extreme Air Pressure Under Water
No Gasket Required

Fig. H-314
With Female Union

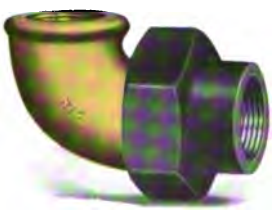

Fig. H-315
With Male Union

NO INSERTED PARTS

Sizes ..... inches	¼	⅜	½	¾	1
Female Union, Fig. H-314 ..... each	.25	.45	.65	.85	1.00
Galvanized ..... "	.35	.50	1.00	1.25	1.50
Male Union, Fig. H-315 ..... "	.30	.50	.75	.95	1.10
Galvanized ..... "	.40	.65	1.10	1.40	1.65
Sizes ..... inches	**1¼**	**1½**	**2**	**2½**	**....**
Female Union, Fig. H-314 ..... each	1.35	1.60	2.35	4.30	....
Galvanized ..... "	2.00	2.40	3.50	6.45	....
Male Union, Fig. H-315 ..... "	1.60	1.80	2.70	5.00	....
Galvanized ..... "	2.40	2.70	4.00	7.50	....

When not specified male or female, female always sent.

In many cases when an elbow or tee is used, it is necessary to place a union near it.

The combination fittings shown on this and the following page renders the use of a separate union and nipple unnecessary. The reduction in the number of joints lessens the liability of leakage, saves time and trouble, and makes it possible to work in close quarters when necessary.

The "Kewanee" unions which form a part of these fittings possess the special advantages described on page 104.

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"KEWANEE" UNION TEES
"KEWANEE" COMBINATION BRASS AND IRON GROUND BALL JOINT

(Patented)

Non-corrosive Thread Connection
Each Fitting Tested with Extreme Air Pressure Under Water
No Gasket Required

Fig. H-316
With Female Union

Fig. H-317
With Male Union

NO INSERTED PARTS

Size ..... inches	1/4	3/8	1/2	3/4	1
Female Union, Fig. H-316 ..... each	.30	.50	.70	.90	1.05
Galvanized ..... "	.40	.65	1.05	1.30	1.60
Male Union, Fig. H-317 ..... "	.35	.55	.80	1.00	1.20
Galvanized ..... "	.45	.75	1.20	1.50	1.80
Size ..... inches	1 1/4	1 1/2	2	2 1/2	....
Female Union, Fig. H-316 ..... each	1.45	1.75	2.55	4.80	....
Galvanized ..... "	2.20	2.65	3.90	7.20	....
Male Union, Fig. H-317 ..... "	1.65	1.95	2.95	5.60	....
Galvanized ..... "	2.50	3.00	4.45	8.50	....

When not specified male or female, female always furnished.

One male Kewanee union ell or tee replaces four ordinary fittings This is recognized as one of the most valuable innovations brought out in recent years.

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"KEWANEE" CIRCULATING BOILER FITTINGS

"KEWANEE" COMBINATION BRASS AND IRON GROUND BALL JOINT

(Patented)

Non-corrosive Thread Connection

Each Fitting Tested with Extreme Air Pressure Under Water

No Gasket Required

Galvanized

Fig. H-318

Fig. H-319

	Female—Male ¾ x ¾ x 1 Each	Female—Male ¾ x 1¼ x 1 Each	Female—Male 1 x 1¼ x 1 Each
"Kewanee" Boiler Elbow with Malleable Union on Brass Ell. Fig. H-318	1.50	1.60	1.20
"Kewanee" Boiler Coupling with Male Union on Brass Thread End. Fig. H-319	1.20	1.25	1.10

A coupling having all the advantages of a connection requiring no gasket to make a tight seal — besides a screw joint of different metals, thereby non-corrosive. The feature of an iron ring screwed to brass makes it possible to disconnect without injury to the ring, which will be appreciated by the user.

These fittings are read in the following order: First, the union end; next, the internal thread on male end; and last, the external thread on male end.

"KEWANEE" BOILER COUPLINGS
"KEWANEE" COMBINATION BRASS AND IRON GROUND BALL JOINT

(Patented)

Non-corrosive Thread Connection

Each Fitting Tested with Extreme Air Pressure Under Water

No Gasket Required

Fig. H-320

STRAIGHT COUPLING

The male thread on brass end is always 1 inch.

The male thread on malleable end is always ¾ inch.

Fig. H-321

BENT COUPLING

Size ..... inches	¾
Fig. H-320 ..... each	.65
Fig. H-321 ..... "	.65

Bent Couplings are never sent tapped on the inside of the brass end unless so ordered.

Straight Couplings are always sent tapped ½ inch on the inside of the brass end unless specified otherwise.

A coupling having all the advantages of a connection requiring no gasket to make a tight seal, besides a screw joint of different metals, thereby non-corrosive. The feature of an iron ring screwed to brass makes it possible to disconnect without injury to the ring, which will be appreciated by the user.

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"KEWANEE" UNION SERVICE COCKS

"KEWANEE" COMBINATION BRASS AND IRON BALL JOINT

(Patented)

Non-corrosive Thread Connection

Each Union Connection Tested with Extreme Air Pressure Under Water

No Gasket Required

Fig. H-322

Size.....inches	½	¾	1	1¼	1½	2
Price.....each	1.40	1.55	2.20	3.40	5.00	7.00

This cock has the well-known "Kewanee" union features and makes a good service connection.

Will furnish with male union unless otherwise ordered.

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"KEWANEE" UNION STANDARD GLOBE AND ANGLE VALVES

(Patented)

Suitable for Steam Working Pressure up to 125 Pounds

Each Union Connection Tested with Extreme Air Pressure Under Water

No Gasket Required

Fig. H-323
Angle with Male Union

Fig. H-324
Globe with Male Union

Size .....inches	1/8	1/4	3/8	1/2	3/4	1	1 1/4
Each	.72	.72	.77	1.00	1.26	1.80	2.52
Size .....inches	1 1/2	2	2 1/2	3	3 1/2	4	....
Each	3.50	5.30	10.00	14.40	26.50	36.00	....

Frequently valves of this construction can be used to advantage as the union connection on one end of the valve body greatly facilitates removal of the valve from the line for repairs. The use of these valves also dispenses with a separate union and a nipple to connect the union with the valve.

Will furnish with male union unless otherwise specified.

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"KEWANEE" UNION STANDARD GATE VALVES

(Patented)

Suitable for Steam Working Pressures up to 125 Pounds
Each Union Connection Tested with Extreme Air Pressure Under Water

Fig. H-325

With Female Union

Size ..... inches	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Each.....	1.25	1.25	1.30	1.75	2.50	3.50	5.00	7.50	14.00	20.00

Frequently valves of this construction can be used to advantage, as the Union connection on one end of the valve body greatly facilitates removal of the valve from the line for repairs. The use of these valves also dispenses with a separate union and a nipple to connect the union with the valve.

Will furnish with female union unless otherwise specified.

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• "KEWANEE" UNION SWING CHECK VALVES

"KEWANEE" COMBINATION BRASS AND IRON BALL JOINT

(Patented)

Non-corrosive Thread Connection
Each Union Connection Tested with Extreme Air Pressure Under Water
Suitable for Steam Working Pressures up to 125 pounds

Fig. H-326

Fig. H-327

PRICE LIST

Size.....inches	⅜	½	¾	1	1¼	1½	2	2½	3
Black.....each	2.15	2.25	2.75	3.50	4.25	5.50	7.50	15.00	22.00
Galvanized. "	2.25	2.45	3.00	3.85	4.65	6.25	8.25	16.75	24.25

It is good practice to place a union in the pipe line near the place where a check valve is used.

This formerly required the use of a check valve, a separate union and a nipple to connect the two.

The "Kewanee" union check valve enables the fitter to dispense with the nipple, and saves the time consumed in assembling the three parts. It marks a distinct advance in convenience and economy.

The check valve is provided with a clean-out at bottom. The union has the "Kewanee" brass-against-iron non-corrosive ball joint. It is made with male or female union, but is always furnished with female union unless otherwise specified.

These valves are equally serviceable in vertical or horizontal positions.

This valve is furnished at a much lower cost than the old combination which it represents, and not only saves material, but also labor involved.

Figure H-328 shows a method of installation whereby an air chamber is formed and water hammer avoided.

Fig. H-328

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"KEWANEE" UNION RADIATOR GATE VALVES

(Patented)

Wood Wheels

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-329

Size .....inches	½	¾	1	1¼	1½	2
Rough Body, Plain, Fig. H-329..each	2.15	2.80	3.75	5.10	7.10	10.65
Rough Body, Plated all over except Union, No. H-330 .... "	2.45	3.15	4.15	5.55	7.60	11.40

Will furnish with male union and both pipe threads will be right hand unless specifically ordered otherwise.

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"KEWANEE" UNION RADIATOR VALVES SPECIAL PATTERN

(Patented)

Jenkins Discs. Wood Wheels

Fig. H-331

Threads: Male right-hand on union, female right-hand on bottom of valve.

Size ..... inches	½	¾	1
Rough Body, Finished Trimmings, Fig. H-331	2.75	3.50	4.30
Rough Body, Plated Trimmings, No. H-332	3.00	3.75	4.65
Rough Body, Plated All Over, No. H-333	3.05	3.80	4.75
Finished All Over, No. H-334	3.25	4.00	4.80
Finished and Plated All Over, No. H-335	3.50	4.25	5.25

Size ..... inches	1¼	1½	2
Rough Body, Finished Trimmings, Fig. H-331	5.85	7.75	12.60
Rough Body, Plated Trimmings, No. H-332	6.25	8.00	12.85
Rough Body, Plated All Over, No. H-333	6.40	8.10	13.10
Finished All Over, No. H-334	6.40	8.75	13.85
Finished and Plated All Over, No. H-335	7.00	9.25	14.35

In ordering, always use valve numbers and sizes.

Will furnish with male union, and both pipe threads will be right hand unless specifically ordered otherwise.

We shall fill orders for this style radiator valve tapped as above, unless otherwise specified, and shall invariably refuse to allow the return of such as may be incorrectly ordered.

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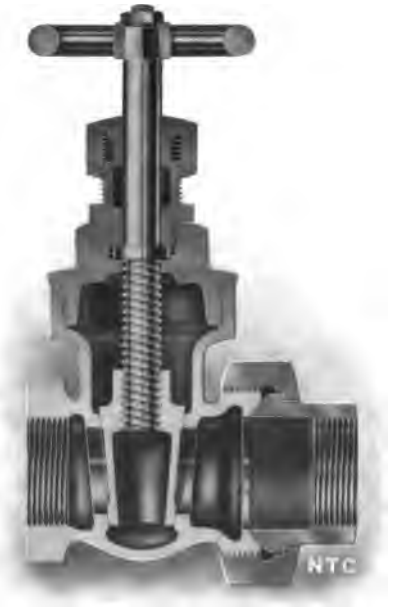
"KEWANEE" UNION MEDIUM PRESSURE GATE VALVES

Wedge Gate Pattern

Suitable for Steam Working Pressures Up to 175 Pounds

Each Union Connection Tested with Extreme Air Pressure Under Water

Fig. H-336



Above valves made to order only and at prices which will be quoted on application.

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SUMMARY

"KEWANEE" SPECIALTIES

"Kewanee" Unions — Octagon Pattern.
"Kewanee" Unions — Round End Pattern.
"Kewanee" Unions — Hexagon Pattern.
"Kewanee" Unions — Eccentric Pattern.
"Kewanee" Unions — Male and Female Pattern.
"Kewanee" Hose Unions.
"Kewanee" Air Drill Unions.
"Kewanee" Air Pump Unions.
"Kewanee" Unions—Extra Heavy Pattern.
"Kewanee" Flange Unions.
"Kewanee" Union Ells — with Male or Female Union.
"Kewanee" Union Tees — with Male or Female Union.
"Kewanee" Circulating Boiler Fittings — Ells and Couplings.
"Kewanee" Boiler Couplings — Bent and Straight Patterns.
"Kewanee" Union Service Cocks — with Male or Female Union.
"Kewanee" Union Globe Valves — with Male or Female Union.
"Kewanee" Union Angle Valves — with Male or Female Union.
"Kewanee" Union Gate Valves — with Male or Female Union.
"Kewanee" Union Swing Check Valves — with Male or Female Union.
"Kewanee" Union Radiator Gate Valve — with Male or Female Union.
"Kewanee" Union Radiator Valve, Special Pattern — with Male or Female Union.
"Kewanee" Union Medium Pressure Gate Valves — with Male or Female Union.
"Kewanee" Union Valves — All kinds.

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CAST IRON FITTINGS

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CAST IRON FITTINGS

SCREWED FITTINGS

Standard

Our standard screwed fittings are neat in appearance, of good weight, and are an excellent article for use with steam, air, gas, or water.

We recommend them for steam pressures up to 125 pounds. Many of them are in use under steam pressures up to 150 pounds, and in sizes below 2 inches this is probably safe practice.

Extra Heavy

We make a line of extra heavy fittings which we recommend for use when there is danger of shocks or water hammer and the pressure exceeds 125 pounds.

These extra heavy fittings are recommended, and will give satisfaction for pressures up to 250 pounds, but as in the case of all fittings or valves, when there is a possibility of shock due to water hammer, care must be taken to avoid danger by proper cushioning of the line.

Expansion and contraction must also be properly provided for, especially on outside work.

FLANGED FITTINGS

Standard

Our *standard flanged fittings* are recommended for steam pressures up to 125 pounds.

They have flanges of the diameters, thicknesses, drilling, and bolt circles of the American Society of Mechanical Engineers or Master Steam Fitters Standard.

It should be borne in mind, however, that there are cases where stresses produced by disalignment and weight of piping, expansion and contraction, or shocks due to water hammer may be so serious as to make it more desirable and safer to use the extra heavy fittings even at 125 pounds pressure.

Extra Heavy

For full description of extra heavy flanged fittings see page 205.

SIZES

The variety of sizes shown on the succeeding pages will, we believe, be sufficient for the general trade.

It will be noted that we have patterns in the standard screwed fittings for all the common reducing sizes. In addition to these we can also make almost any conceivable reduction by bushing in the sand when molded.

We can furnish any style or size of flanged fitting desired by making up patterns as required; however, in a majority of cases considerable money can be saved by using reducing flanges (either standard or eccentric—see page 161).

The eccentric reducing flanges allow proper drainage, and the objection to the abrupt shoulder is one which could not be overcome in any case, except by the use of extremely long, special patterns.

GALVANIZED FITTINGS

All fittings can be obtained either black or galvanized.

TESTED FITTINGS

We are prepared to furnish upon special order, and at a special price, cast iron fittings tested according to specifications.

THREADS

All fittings are threaded to a uniform gauge.

Note

When ordering, the service for which the fittings are intended should be fully stated.

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CAST IRON FITTINGS

STANDARD ELBOWS—SCREWED

Fig. H-398

STRAIGHT ELBOWS

Size .....inches	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Fig. H.-398 R. H...each	.05	.05	.06	.08	.10½	.16	.20	.28	.50	.75
R. H., Galvanized... "	.10	.10	.12	.16	.21	.32	.40	.56	1.00	1.50
No. H-399 R. and L. "	.06	.06	.07	.09	.12	.18	.23	.32	.60	.85
No. H-400 Pitched.. "	...	...	...	.10	.13	.20	.25	.35	.65	1.00
Size.....inches	3 1/2	4	4 1/2	5	6	7	8	9	10	12
Fig. H. 398 R. H....each	1.05	1.20	1.75	2.00	2.75	4.70	6.75	9.00	13.50	20.00
R. H., Galvanized... "	2.10	2.40	3.50	4.00	5.50	9.40	13.50	18.00	27.00	40.00
No. H. 400 Pitched.. "	1.30	1.50	....	....	....	....	...	....	....	....

R. & L. Cast Iron Screwed Ells have ribs on the band of the end that is tapped left-hand.

Fig. H-401

REDUCING ELBOWS

Size.....inches	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2
Fig. H-401.....each	.07	.09	.12	.18	.23	.32	.60	.85	1.20
Galvanized..... "	.14	.18	.24	.36	.46	.64	1.20	1.70	2.40
No. H-402 Pitched..... "	...	...	.14½	.22	.28	.39	.75	1.10	1.45
Size.....inches	4	4 1/2	5	6	7	8	9	10	12
Fig. H-401.....each	1.40	2.00	2.30	3.15	5.40	7.75	10.50	15.50	23.00
Galvanized..... "	2.80	4.00	4.60	6.30	10.80	15.50	21.00	31.00	46.00
No. H-402 Pitched..... "	1.70	....	....	....	....	....	....	....	....

Other sizes special.
2½ and 3-inch elbows, with 11½ threads per inch can be furnished at special prices
For list standard sizes, see page 133.
The list price of reducing fittings is determined by the largest opening.
For general description and recommendation as to working pressures, see opposite page.

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CAST IRON FITTINGS

STANDARD ELBOWS—SCREWED

Fig. H-403

45° ELBOWS

Size.....inches	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Each.....	.06	.06	.07	.10	.12	.19	.24	.34	.60	.90
Galvanized, each	.12	.12	.14	.20	.24	.38	.48	.68	1.20	1.80

Size.....inches	3½	4	4½	5	6	7	8	9	10	12
Each.....	1.25	1.45	2.20	2.50	3.45	5.90	8.50	11.25	17.00	25.00
Galvanized, each	2.50	2.90	4.40	5.00	6.90	11.80	17.00	22.50	34.00	50.00

Other sizes special.

60° ELBOWS

Size.....inches	1½	2
Each.....	.35	.60

Other sizes special.

Fig. H-404

SIDE OUTLET ELBOWS

Size.....inches	½	¾	1	1¼	1½	2	2½	3	3½
Each.....	.18	.24	.30	.48	.60	.84	1.50	2.25	3.15
Galvanized, each.....	.36	.48	.60	.96	1.20	1.68	3.00	4.50	6.30

Size.....inches	4	4½	5	6	7	8	9	10	12
Each.....	3.60	5.25	6.00	8.25	14.00	20.00	26.00	40.00	60.00
Galvanized, each.....	7.20	10.50	12.00	16.50	28.00	40.00	52.00	80.00	120.00

For list of standard sizes, see opposite page.
For general description and recommendation as to working pressures, see page 130.

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CAST IRON FITTINGS

STANDARD ELBOWS—SCREWED

List of Standard Sizes

Inches	Inches	Inches
¼ x ¼	2 x 1	4½ x 4
⅜ x ⅜	2 x 1¼	4½ x 4½
½ x ⅜	2 x 1½	
½ x ½	2 x 2	5 x 3
¾ x ½		5 x 4
¾ x ¾	2½ x 1½	5 x 5
	2½ x 2	
1 x ½	2½ x 2½	6 x 4
1 x ¾		6 x 5
1 x 1	3 x 2	6 x 6
	3 x 2½	
1¼ x ½	3 x 3	7 x 6
1¼ x ¾		7 x 7
1¼ x 1	3½ x 2½	
1¼ x 1¼	3½ x 3	8 x 6
	3½ x 3½	8 x 8
1½ x ¾		9 x 9
1½ x 1	4 x 2	
1½ x 1¼	4 x 2½	10 x 10
1½ x 1½	4 x 3	
	4 x 3½	12 x 12
	4 x 4	

Other sizes special.

Side Outlet Elbows

Size, inches..... ½, ¾, 1, 1¼, 1½, 2, 2½, 3, 3½, 4, 4½, 5, 6, 7, 8, 9, 10, 12

45° Elbows

Size, inches..... ¼, ⅜, ½, ¾, 1, 1¼, 1½, 2, 2½, 3, 3½, 4, 4½, 5, 6, 7, 8, 9, 10, 12

60° Elbows

Size, inches 1¼, 2

Pitched Elbows

Size, inches..... 1 x ¾, 1, 1¼ x 1, 1¼, 1½ x 1¼, 1½, 2 x 1½, 2, 2½ x 2, 2½, 3 x 2½, 3, 3½ x 3, 3½, 4

Right and Left Elbows

Size, inches..... ¼, ⅜, ½, ¾, 1, 1¼, 1½, 2, 2½, 3

Other sizes special.

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CAST IRON FITTINGS

STANDARD TEES—SCREWED

Fig. H-405

STRAIGHT TEES

Size.....inches	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Each.....	.08	.08	.09	.12	.15	.23	.29	.41	.73	1.10
Galvanized.....each	.16	.16	.18	.24	.30	.46	.58	.82	1.46	2.20
Size.....inches	3½	4	4½	5	6	7	8	9	10	12
Each.....	1.50	1.75	2.55	3.00	4.00	6.80	9.75	13.00	19.50	29.00
Galvanized.....each	3.00	3.50	5.10	6.00	8.00	13.60	19.50	26.00	39.00	58.00

Fig. H-406

REDUCING TEES

Size..... inches	½	¾	1	1¼	1½	2	2½	3	3½
Each.....	.10	.14	.17	.27	.33	.47	.83	1.25	1.75
Galvanized..... each	.20	.28	.34	.54	.66	.94	1.66	2.50	3.50
Size..... inches	4	4½	5	6	7	8	9	10	12
Each.....	2.00	2.95	3.50	4.60	7.80	11.25	15.00	22.50	33.50
Galvanized..... each	4.00	5.90	7.00	9.20	15.60	22.50	30.00	45.00	67.00

Other sizes special.

2½ and 3-inch tees, with 11½ threads per inch, can be furnished at special prices.

For list of standard sizes, see pages 136, 137 and 138.

The list price of reducing fittings is determined by the largest opening.

For general description and recommendation as to working pressures, see page 130.

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CAST IRON FITTINGS

STANDARD TEES—SCREWED

Fig. H-407

SIDE OUTLET TEES

Size.....inches	½	¾	1	1¼	1½	2	2½	3	3½
Each.....	.27	.36	.45	.70	.90	1.25	2.25	3.25	4.50
Galvanized,each	.54	.72	.90	1.40	1.80	2.50	4.50	6.50	9.00
Size.....inches	4	4½	5	6	7	8	9	10	12
Each.....	5.25	7.65	9.00	12.00	20.00	30.00	40.00	50.00	90.00
Galvanized,each	10.50	15.30	18.00	24.00	40.00	60.00	80.00	100.00	180.00

Fig. H-408

Fig H-409

ECCENTRIC TEES

These fittings are designed to prevent the accumulation and lodgment of condensation. Orders must be accompanied by a sketch, showing position in which the fitting is placed. Prices on application.

For general description and recommendation as to working pressures, see page 130.

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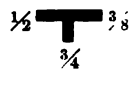
CAST IRON FITTINGS

STANDARD TEES—SCREWED

List of Standard Sizes

In describing Tees the run is first named, then the outlet, thus:



Inches	Inches	Inches
¼ x ¼ x ¼	1 x ¾ x 1	1½ x ½ x 1½
	1 x ¾ x 1¼	1½ x ¾ x ¾
⅜ x ⅜ x ⅜	1 x ¾ x 1½	1½ x ¾ x 1
⅜ x ⅜ x ½	1 x ¾ x 2	1½ x ¾ x 1¼
	1 x 1 x ⅜	1½ x ¾ x 1½
½ x ⅜ x ⅜	1 x 1 x ½	1½ x ¾ x 2
½ x ⅜ x ½	1 x 1 x ¾	1½ x 1 x ½
½ x ½ x ⅜	1 x 1 x 1	1½ x 1 x ¾
½ x ½ x ½	1 x 1 x 1¼	1½ x 1 x 1
½ x ½ x ¾	1 x 1 x 1½	1½ x 1 x 1¼
½ x ½ x 1	1 x 1 x 2	1½ x 1 x 1½
		1½ x 1 x 2
¾ x ⅜ x ⅜	1¼ x ½ x 1¼	1½ x 1¼ x ½
¾ x ⅜ x ¾	1¼ x ½ x 1½	1½ x 1¼ x ¾
¾ x ½ x ½	1¼ x ¾ x ¾	1½ x 1¼ x 1
¾ x ½ x ¾	1¼ x ¾ x 1	1½ x 1¼ x 1¼
¾ x ½ x 1	1¼ x ¾ x 1¼	1½ x 1¼ x 1½
¾ x ¾ x ⅜	1¼ x ¾ x 1½	1½ x 1¼ x 2
¾ x ¾ x ½	1¼ x ¾ x 2	1½ x 1½ x ½
¾ x ¾ x ¾	1¼ x 1 x ½	1½ x 1½ x ¾
¾ x ¾ x 1	1¼ x 1 x ¾	1½ x 1½ x 1
¾ x ¾ x 1¼	1¼ x 1 x 1	1½ x 1½ x 1¼
¾ x ¾ x 1½	1¼ x 1 x 1¼	1½ x 1½ x 1½
¾ x ¾ x 2	1¼ x 1 x 1½	1½ x 1½ x 2
	1¼ x 1 x 2	1½ x 1½ x 2½
1 x ⅜ x 1	1¼ x 1¼ x ½	
1 x ½ x ½	1¼ x 1¼ x ¾	2 x ½ x 2
1 x ½ x ¾	1¼ x 1¼ x 1	2 x ¾ x 1½
1 x ½ x 1	1¼ x 1¼ x 1¼	2 x ¾ x 2
1 x ¾ x ½	1¼ x 1¼ x 1½	2 x 1 x ¾
1 x ¾ x ¾	1¼ x 1¼ x 2	2 x 1 x 1
	1½ x ½ x 1¼	2 x 1 x 1¼

Other sizes special.

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CAST IRON FITTINGS

STANDARD TEES—SCREWED

List of Standard Sizes—Continued

Inches	Inches	Inches
2 x 1 x 1½	2½ x 2½ x ¾	3½ x 2½ x 2½
2 x 1 x 2	2½ x 2½ x 1	3½ x 2½ x 3
2 x 1¼ x ¾	2½ x 2½ x 1¼	3½ x 3 x 1½
2 x 1¼ x 1	2½ x 2½ x 1½	3½ x 3 x 2
2 x 1¼ x 1¼	2½ x 2½ x 2	3½ x 3 x 2½
2 x 1¼ x 1½	2½ x 2½ x 2½	3½ x 3 x 3
2 x 1¼ x 2	2½ x 2½ x 3	3½ x 3½ x 1
2 x 1½ x ½	2½ x 2½ x 4	3½ x 3½ x 1¼
2 x 1½ x ¾		3½ x 3½ x 1½
2 x 1½ x 1	3 x 1 x 3	3½ x 3½ x 2
2 x 1½ x 1¼	3 x 1¼ x 3	3½ x 3½ x 2½
2 x 1½ x 1½	3 x 1½ x 2	3½ x 3½ x 3
2 x 1½ x 2	3 x 1½ x 2½	3½ x 3½ x 3½
2 x 1½ x 2½	3 x 1½ x 3	3½ x 3½ x 4
2 x 2 x ½	3 x 2 x 1	
2 x 2 x ¾	3 x 2 x 1¼	
2 x 2 x 1	3 x 2 x 1½	4 x 1 x 4
2 x 2 x 1¼	3 x 2 x 2	4 x 1¼ x 4
2 x 2 x 1½	3 x 2 x 2½	4 x 1½ x 4
2 x 2 x 2	3 x 2 x 3	4 x 2 x 1½
2 x 2 x 2½	3 x 2½ x 1	4 x 2 x 2
2 x 2 x 3	3 x 2½ x 1¼	4 x 2 x 2½
	3 x 2½ x 1½	4 x 2 x 3
2½ x ¾ x 2½	3 x 2½ x 2	4 x 2 x 4
2½ x 1 x 2½	3 x 2½ x 2½	4 x 2½ x 1
2½ x 1¼ x 2	3 x 2½ x 3	4 x 2½ x 1½
2½ x 1¼ x 2½	3 x 3 x ¾	4 x 2½ x 2
2½ x 1½ x 1	3 x 3 x 1	4 x 2½ x 2½
2½ x 1½ x 1¼	3 x 3 x 1¼	4 x 2½ x 3
2½ x 1½ x 1½	3 x 3 x 1½	4 x 2½ x 4
2½ x 1½ x 2	3 x 3 x 2	4 x 3 x ¾
2½ x 1½ x 2½	3 x 3 x 2½	4 x 3 x 1
2½ x 2 x ½	3 x 3 x 3	4 x 3 x 1¼
2½ x 2 x ¾	3 x 3 x 3½	4 x 3 x 1½
2½ x 2 x 1	3 x 3 x 4	4 x 3 x 2
2½ x 2 x 1¼		4 x 3 x 2½
2½ x 2 x 1½	3½ x 1 x 3½	4 x 3 x 3
2½ x 2 x 2	3½ x 1¼ x 3½	4 x 3 x 3½
2½ x 2 x 2½	3½ x 1½ x 3½	4 x 3 x 4
2½ x 2 x 3	3½ x 2 x 3½	4 x 3½ x 2½
2½ x 2½ x ½	3½ x 2½ x 2	4 x 3½ x 3

Other sizes special.

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CAST IRON FITTINGS

STANDARD TEES — SCREWED

List of Standard Sizes — Continued

Inches	Inches	Inches
4 x 3½ x 3½	5 x 5 x 2	7 x 7 x 6
4 x 3½ x 4	5 x 5 x 2½	7 x 7 x 7
4 x 4 x ¾	5 x 5 x 3	
4 x 4 x 1	5 x 5 x 3½	8 x 4 x 8
4 x 4 x 1¼	5 x 5 x 4	8 x 5 x 5
4 x 4 x 1½	5 x 5 x 4½	8 x 5 x 8
4 x 4 x 2	5 x 5 x 5	8 x 6 x 6
4 x 4 x 2½	5 x 5 x 6	8 x 6 x 7
4 x 4 x 3		8 x 6 x 8
4 x 4 x 3½	6 x 2 x 6	8 x 7 x 6
4 x 4 x 4	6 x 2½ x 6	8 x 7 x 8
4 x 4 x 5	6 x 3 x 6	8 x 8 x 2
4 x 4 x 6	6 x 4 x 4	8 x 8 x 2½
	6 x 4 x 6	8 x 8 x 3
4½ x 4½ x 1½	6 x 5 x 4	8 x 8 x 3½
4½ x 4½ x 2	6 x 5 x 5	8 x 8 x 4
4½ x 4½ x 2½	6 x 5 x 6	8 x 8 x 4½
4½ x 4½ x 3	6 x 6 x 1	8 x 8 x 5
4½ x 4½ x 3½	6 x 6 x 1¼	8 x 8 x 6
4½ x 4½ x 4	6 x 6 x 1½	8 x 8 x 7
4½ x 4½ x 4½	6 x 6 x 2	8 x 8 x 8
	6 x 6 x 2½	
5 x 2 x 5	6 x 6 x 3	9 x 9 x 5
5 x 2½ x 3	6 x 6 x 3½	9 x 9 x 7
5 x 2½ x 4	6 x 6 x 4	9 x 9 x 9
5 x 2½ x 5	6 x 6 x 4½	
5 x 3 x2	6 x 6 x 5	10 x 8 x 8
5 x 3 x 2½	6 x 6 x 6	10 x 10 x 4
5 x 3 x 3	6 x 6 x 7	10 x 10 x 5
5 x 3 x 3½	6 x 6 x 8	10 x 10 x 6
5 x 3 x 4		10 x 10 x 8
5 x 3 x 4½	7 x 5 x 5	10 x 10 x 10
5 x 3 x 5	7 x 5 x 6	
5 x 4 x 2	7 x 6 x 5	12 x 8 x 8
5 x 4 x 2½	7 x 6 x 6	12 x 8 x 10
5 x 4 x 3	7 x 6 x 7	12 x 12 x 4
5 x 4 x 4	7 x 7 x 2½	12 x 12 x 5
5 x 4 x 4½	7 x 7 x 3	12 x 12 x 6
5 x 4 x 5	7 x 7 x 3½	12 x 12 x 8
5 x 5 x 1¼	7 x 7 x 4	12 x 12 x 10
5 x 5 x 1½	7 x 7 x 5	12 x 12 x 12

Other sizes special.

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CAST IRON FITTINGS

STANDARD CROSSES—SCREWED

Fig. H-410

STRAIGHT CROSSES

Size.....inches	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2
Each.....	.15	.16	.22	.27	.42	.53	.75	1.30	2.00	2.70
Galvanized.....each	.30	.32	.44	.54	.84	1.06	1.50	2.60	4.00	5.40
Size.....inches	4	4 1/2	5	6	7	8	9	10	12	....
Each.....	3.15	4.60	5.50	7.25	12.25	17.50	23.50	35.00	52.50	....
Galvanized.....each	6.30	9.20	11.00	14.50	24.50	35.00	47.00	70.00	105.00	....

Fig. H-411

REDUCING CROSSES

Size.....inches	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2
Each.....	.18	.25	.30	.46	.60	.83	1.45	2.20	3.00
Galvanized.....each	.36	.50	.60	.92	1.20	1.66	2.90	4.40	6 00
Size.....inches	4	4 1/2	5	6	7	8	9	10	12
Each.....	3.50	5.10	6.00	8.00	13.50	19.25	26.00	38.50	58.00
Galvanized.....each	7.00	10.20	12.00	16.00	27.00	38.50	52.00	77.00	116.00

Other sizes special.

For list of standard sizes, see page 140.

The list price of reducing fittings is determined by the largest opening.

For general description and recommendation as to working pressures, see page 130.

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CAST IRON FITTINGS

STANDARD CROSSES—SCREWED

Fig. H-412

SIDE OUTLET CROSSES

Size .....inches	½	¾	1	1¼	1½	2	2½	3	3½
Each	.36	.48	.60	.95	1.20	1.65	3.00	4.50	6.30
Galv.....each	.72	.96	1.20	1.90	2.40	3.30	6.00	9.00	12.60

Size .....inches	4	4½	5	6	7	8	9	10	12
Each	7.20	10.50	12.00	16.50	28.00	40.00	52.00	80.00	120.00
Galv..... each	14.40	21.00	24.00	33.00	56.00	80.00	104.00	160.00	240.00

List of Standard Sizes

STANDARD CROSSES—SCREWED

Inches	Inches	Inches
⅜ x ⅜ x ⅜ x ⅜	2 x 2 x 1½ x 1½	4 x 4 x 4 x 4
½ x ½ x ¼ x ¼	2 x 2 x 2 x 2	4½ x 4½ x 4½ x 4½
½ x ½ x ⅜ x ⅜	2½ x 2 x 1½ x 1½	5 x 5 x 2 x 2
½ x ½ x ½ x ½	2½ x 2½ x ¾ x ¾	5 x 5 x 2½ x 2½
	2½ x 2½ x 1 x 1	5 x 5 x 3 x 3
¾ x ¾ x ⅜ x ⅜	2½ x 2½ x 1¼ x 1¼	5 x 5 x 4 x 4
¾ x ¾ x ½ x ½	2½ x 2½ x 1½ x 1½	5 x 5 x 5 x 5
¾ x ¾ x ¾ x ¾	2½ x 2½ x 2 x 2	6 x 6 x 2 x 2
	2½ x 2½ x 2½ x 2½	6 x 6 x 2½ x 2½
1 x 1 x ½ x ½		6 x 6 x 3 x 3
1 x 1 x ¾ x ¾	3 x 3 x ¾ x ¾	6 x 6 x 3½ x 3½
1 x 1 x 1 x 1	3 x 3 x 1 x 1	6 x 6 x 4 x 4
	3 x 3 x 1¼ x 1¼	6 x 6 x 5 x 5
1¼ x 1¼ x ½ x ½	3 x 3 x 1½ x 1½	6 x 6 x 6 x 6
1¼ x 1¼ x ¾ x ¾	3 x 3 x 2 x 2	7 x 7 x 5 x 5
1¼ x 1¼ x 1 x 1	3 x 3 x 2½ x 2½	7 x 7 x 6 x 6
1¼ x 1¼ x 1¼ x 1¼	3 x 3 x 3 x 3	7 x 7 x 7 x 7
	3½ x 3½ x 2 x 2	8 x 8 x 6 x 6
1½ x 1¼ x 1 x 1	3½ x 3½ x 2½ x 2½	8 x 8 x 7 x 7
1½ x 1½ x ½ x ½	3½ x 3½ x 3 x 3	8 x 8 x 8 x 8
1½ x 1½ x ¾ x ¾	3½ x 3½ x 3½ x 3½	9 x 9 x 9 x 9
1½ x 1½ x 1 x 1		10 x 10 x 7 x 7
1½ x 1½ x 1¼ x 1¼	4 x 4 x 1¼ x 1¼	10 x 10 x 8 x 8
1½ x 1½ x 1½ x 1½	4 x 4 x 1½ x 1½	10 x 10 x 10 x 10
	4 x 4 x 2 x 2	12 x 12 x 8 x 8
2 x 2 x ¾ x ¾	4 x 4 x 2½ x 2½	12 x 12 x 10 x 10
2 x 2 x 1 x 1	4 x 4 x 3 x 3	12 x 12 x 12 x 12
2 x 2 x 1¼ x 1¼	4 x 4 x 3½ x 3½	

SIDE OUTLET CROSSES

Size, inches.....⅛, ¼, ⅜, ½, ¾, 1, 1¼, 1½, 2, 2½, 3, 3½, 4, 4½, 5, 6, 7, 8, 9, 10, 12.

For general description and recommendation as to working pressures, see page 130.

Other sizes special.

CAST IRON FITTINGS

STANDARD Y BRANCHES

Fig. H-413

Size.....inches	½	¾	1	1¼	1½	2	2½	3
Fig. H-413 .....each	.20	.28	.34	.54	.66	.94	1.66	2.50
No. H-414, Reducing..... "	.23	.33	.40	.62	.76	1.08	1.90	2.90
Galvanized..... "	.40	.56	.68	1.08	1.32	1.88	3.32	5.00
Size.....inches	3½	4	4½	5	6	7	8	10
Fig. H-413 .....each	3.50	4.00	5.90	7.00	9.20	15.60	22.50	45.00
No. H-414, Reducing..... "	4.00	4.60	6.65	8.00	10.60	18.00	26.00	51.75
Galvanized..... "	7.00	8.00	11.80	14.00	18.40	31.20	45.00	90.00

List of Standard Sizes

STANDARD Y BRANCHES

Inches	Inches
½ x ½ x ½	3 x 3 x 2½
½ x ½ x ⅜	3 x 3 x 2
¾ x ¾ x ¾	3½ x 3½ x 3½
¾ x ¾ x ½	3½ x 3½ x 3
1 x 1 x 1	4 x 4 x 4
1 x 1 x ¾	4 x 4 x 3
1¼ x 1¼ x 1¼	4 x 4 x 2
1¼ x 1¼ x 1	4½ x 4½ x 4½
1½ x 1½ x 1½	5 x 5 x 5
1½ x 1½ x 1¼	5 x 5 x 4
2 x 2 x 2	6 x 6 x 6
2 x 2 x 1½	6 x 6 x 4
2½ x 2½ x 2½	7 x 7 x 7
2½ x 2½ x 2	8 x 8 x 8
3 x 3 x 3	10 x10 x10

For general description and recommendation as to working pressures, see page 130.

The list price of reducing fittings is determined by the largest opening. Other sizes special.

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CAST IRON FITTINGS

STANDARD RETURN BENDS—SCREWED

Fig. H-415

CLOSE PATTERN

Size ..... inches	½	¾	1	1¼	1½	2	2½	3	4
Center to Center ..... inches	1¼	1½	1¾	2¼	2½	3¼	3¾	4½	6
Fig. H-415, Right Hand ..... each	.18	.20	.22	.28	.40	.57	1.20	1.70	5.00
Right Hand Galvanized ..... "	.36	.40	.44	.56	.80	1.14	2.40	3.40	10.00
No. H-416, Right and Left, or Left ..... "	.21	.23	.26	.33	.46	.66	1.40	1.95	5.25

Fig. H-417

OPEN PATTERN

Size ..... inches	½	¾	1	1¼	1½	2	2½	3	4
Center to Center ..... inches	1¾	1⅞	2⅜	3	3½	4½	5½	6½	7
Fig. H-417, Right Hand ..... each	.25	.26	.30	.40	.55	.80	1.35	2.20	6.50
Right Hand, Galvanized ..... "	.50	.62	.60	.80	1.10	1.60	2.70	4.40	10.00
No. H-418, Right and Left, or Left .... "	.30	.30	.35	.46	.64	.92	1.55	2.50	7.00

Other sizes special.

Open pattern return bends are identified by the distance center to center. Some sizes have a web between the openings and some do not.

For general description and recommendation as to working pressures, see page 130.

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CAST IRON FITTINGS

STANDARD RETURN BENDS—SCREWED

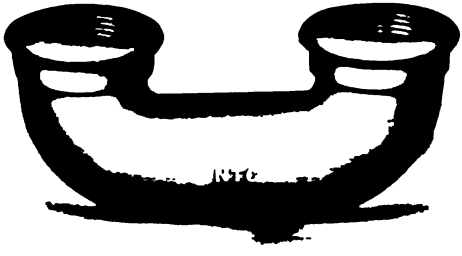
Fig. H-419

CLOSE PATTERN—PITCHED

Sizes.....inches	1	1	1	1	1	1¼	1¼	1¼	1¼	1¼
Length of Coil.....feet	3	4	5	6	8	3	4	5	6	8
Fig. H-419, Right Hand....each	.26	.26	.26	.26	.26	.33	.33	.33	.33	.33
No. H-420, Right and Left... "	.26	.26	.26	.26	.26	.33	.33	.33	.33	.33

All right and left pitched Return Bends are made to order.

Fig. H-421



FLAT BACK—SPECIAL

Sizes.....inches	1	1	1	1¼	1¼	1¼
Center to Center.....inches	3	4	6	4	6	8
Fig. H-421, Right Hand.....each	.45	.50	.75	1.00	1.25	1.50
Galvanized..... "	.80	.90	1.30	1.75	2.00	2.25

Made to order only.
Other sizes special.
For general description and recommendation as to working pressures, see page 130.

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CAST IRON FITTINGS

STANDARD RETURN BENDS—SCREWED

Fig. H-422

WIDE PATTERN

Size.....inches	1	1	1	1	1	1¼	1¼	1¼	1½
Center to Center...in.	3	4	5	6	8	4	6	8	4⅞
Right Hand.....each	.45	.50	.60	.75	1.00	1.00	1.25	2.75	1.30
Galvanized..... „	.80	.90	1.10	1.30	1.60	1.75	2.00	3.75	2.30
Size.....inches	1½	1½	2	2	2	4	4	4	....
Center to Center...in.	6	8	4⅞	6	8	7	11	12	....
Right Hand.....each	1.60	2.00	1.75	2.00	3.50	6.50	7.50	8.00	....
Galvanized..... „	2.60	3.25	3.00	3.25	5.00	10.00	11.00	12.00	....

Other sizes special.

For general description and recommendation as to working pressures, see page 130.

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CAST IRON FITTINGS

STANDARD BACK-OUTLET RETURN BENDS SCREWED

Fig. H-423

Size.....inches	¾	1	1¼	1½	2	2½	3
Center to Center.....inches	1⅞	2¼	2¼	2½	3¼	5½	6½
Fig. H-423, Right Hand..each	.38	.42	.60	.80	1.15	2.00	3.00
Galvanized..... "	.76	.84	1.20	1.60	2.30	4.00	6.00
No. H-424, Right and Left "	.42	.48	.70	.95	1.30	2.30	3.50

The back outlet of right and left return bends is always tapped right hand. Other sizes special.

STANDARD UNION BENDS

Fig. H-425

Size.....inches	1¼
Center to Center.....inches	4
Each.....	1.30
" Galvanized.....	2.25

For general description and recommendation as to working pressures, see page 130.

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CAST IRON FITTINGS

STANDARD REDUCERS—SCREWED

Fig. H-426

REGULAR PATTERN

Size.....inches	2	2½	3	3½	4	4½	5
Each.....	.43	.60	.80	1.00	1.35	1.85	2.00
Galvanized.....each	.86	1.20	1.60	2.00	2.70	3.70	4.00
Size.....inches	6	7	8	9	10	12	....
Each.....	2.70	5.35	6.75	8.35	10.00	15.00	....
Galvanized.....each	5.40	10.70	13.50	16.70	20.00	30.00	....

Fig. H-427

ECCENTRIC PATTERN

Size .....inches	2	2½	3	3½	4	4½	5
Each.....	1.00	1.50	2.40	3.00	4.00	5.00	6.00
Size .....inches	6	7	8	9	10	12	....
Each.....	8.00	9.00	11.00	12.50	14.00	18.00	....

Other sizes special.

For list of standard sizes see following page.

For general description and recommendation as to working pressures, see page 130.

The list price of reducing fittings is determined by the largest opening.

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CAST IRON FITTINGS

STANDARD REDUCERS — SCREWED

List of Standard Sizes

REGULAR PATTERN

Inches	Inches	Inches	Inches
2 x 1½	3 x 2½	4 x 3½	6 x 3
2½ x 1	3½ x 1½	4½ x 4	6 x 4
2½ x1¼	3½ x 2	5 x 3	6 x 5
2½ x 1½	3½ x 2½	5 x 3½	7 x 6
2½ x 2	3½ x 3	5 x 4	8 x 4
3 x 1	4 x 1½	5 x 4½	8 x 6
3 x 1¼	4 x 2	6 x 2	10 x 8
3 x 1½	4 x 2½	6 x 2½	12 x 10
3 x 2	4 x 3		

List of Standard Sizes

ECCENTRIC REDUCERS

Inches	Inches	Inches	Inches	Inches
2 x ¾	3½ x 2½	5 x 3½	8 x 2	10 x 2½
2 x 1	3½ x 3	5 x 4	8 x 2½	10 x 3
2 x 1¼			8 x 3	10 x 3½
2 x 1½	4 x 1¼	6 x 1½	8 x 3½	10 x 4
	4 x 1½	6 x 2	8 x 4	10 x 4½
2½ x 1	4 x 2	6 x 2½	8 x 4½	10 x 5
2½ x 1¼	4 x 2½	6 x 3	8 x 5	10 x 6
2½ x 1½	4 x 3	6 x 3½	8 x 6	10 x 7
2½ x 2	4 x 3½	6 x 4	8 x 7	10 x 8
		6 x 4½		10 x 9
3 x 1	4½ x 2	6 x 5		
3 x 1¼	4½ x 2½		9 x 2	12 x 3
3 x 1½	4½ x 3	7 x 1½	9 x 2½	12 x 3½
3 x 2	4½ x 3½	7 x 2	9 x 3	12 x 4
3 x 2½	4½ x 4	7 x 2½	9 x 3½	12 x 4½
		7 x 3	9 x 4	12 x 5
3½ x 1	5 x 1½	7 x 3½	9 x 4½	12 x 6
3½ x 1¼	5 x 2	7 x 4	9 x 5	12 x 7
3½ x 1½	5 x 2½	7 x 4½	9 x 6	12 x 8
3½ x 2	5 x 3	7 x 5	9 x 7	12 x 9
		7 x 6	9 x 8	12 x 10

Other sizes special.

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CAST IRON FITTINGS

STANDARD CAPS—SCREWED

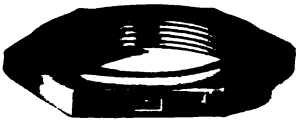
Fig. H-428

Size.....inches	2	2½	3	3½	4	4½	5
Each.....	.26	.40	.54	.75	.87	1.05	1.20
Galvanized.....each	.52	.80	1.08	1.50	1.74	2.10	2.40

Size.....inches	6	7	8	9	10	12	....
Each.....	1.55	2.50	2.85	4.75	5.50	7.00	....
Galvanized.....each	3.10	5.00	5.70	9.50	11.00	14.00	....

STANDARD LOCKNUTS

Fig. H-429



Size.....inches	2	2½	3	3½	4	4½	5
Each.....	.25	.27	.34	.47	.64	.85	.90
Galvanized.....each	.50	.54	.68	.94	1.28	1.70	1.80

Size.....inches	6	7	8	9	10	12	....
Each.....	1.30	1.70	2.35	2.70	3.00	4.00	....
Galvanized.....each	2.60	3.40	4.70	5.40	6.00	8.00	....

Other sizes special.

For general description and recommendation as to working pressures, see page 130.

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CAST IRON FITTINGS

CASING FITTINGS

Size ..... inches	2, 2¼ 2½ 2¾, 3	3¼	3½	3¾	4	4¼	4½
Elbows ..... each	1.10	1.35	1.80	1.80	2.50	2.50	3.00
" Reducing ..... "	1.40	1.75	2.25	2.25	3.00	3.00	3.75
" 45° ..... "	1.60	2.00	2.70	2.70	3.75	3.75	4.00
Tees ..... "	1.50	2.00	2.50	2.50	3.50	3.50	4.00
" Reducing ..... "	1.85	2.50	3.00	3.00	4.35	4.35	5.00
Crosses ..... "	2.20	2.70	3.50	3.50	5.00	5.00	5.70
" Reducing ..... "	2.75	3.30	4.35	4.35	6.25	6.25	7.00
Plugs ..... "	.50	.75	.85	.85	1.35	1.35	1.75
Bushings ..... "	.60	.80	1.00	1.00	1.50	1.50	1.85
Flange Unions .. .. "	2.25	2.75	3.15	3.15	4.50	4.50	5.00
Locknuts .... "	.50	.70	.95	.95	1.25	1.25	1.35
Return Bends, Close .... "	3.00	4.00	5.00	5.00	6.00	6.50	.....
" " Open .... "	3.75	4.50	5.75	5.75	8.00	8.00	.....
Reducers ..... "	1.20	1.50	2.00	2.00	2.75	2.75	3.00
Caps ..... "	.80	1.10	1.30	1.30	1.60	1.60	2.00
Ys ..... "	3.25	4.50	6.00	6.00	8.00	8.00	9.00

Size ..... inches	4¾	5	5⅜ 5⅝	6¼ 6⅝	7⅝	8¼ 8⅝	9⅝
Elbows ..... each	3.00	3.50	4.00	7.00	10.00	13.00	20.00
" Reducing ..... "	3.75	4.35	5.00	8.75	12.50	16.00	25.00
" 45° ..... "	4.00	4.50	5.50	9.00	13.00	16.00	25.00
Tees ..... "	4.25	5.00	5.50	10.00	15.00	20.00	25.00
" Reducing ..... "	5.25	6.25	6.75	12.50	18.75	25.00	30.00
Crosses ..... "	6.00	7.00	7.80	14.00	20.00	26.00	40.00
" Reducing ..... "	7.50	8.75	9.70	17.50	25.00	32.00	50.00
Plugs ..... "	1.75	2.00	2.40	3.75	5.50	6.50	7.50
Bushings ..... "	1.85	2.00	2.50	3.75	5.50	6.50	7.50
Flange Unions ..... "	5.00	5.50	6.50	8.00	10.00	12.00	15.00
Locknuts .... "	1.35	1.50	1.90	2.50	3.50	4.00	4.50
Reducers ..... "	3.00	3.50	4.00	8.00	10.00	12.00	15.00
Caps ..... "	2.00	2.15	2.35	4.00	4.35	6.00	7.25
Ys .... "	9.00	10.00	12.00	17.00	25.00	.....	.....

Galvanized casing fittings can be furnished at double the above lists.

Casing fittings with one or more openings for pipe, add 25 per cent.

NOTE.— Sizes shown indicate nominal inside diameter of casing and will be so furnished unless otherwise specified.

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CAST IRON FITTINGS

STANDARD BRANCH TEES

Fig. H-430 For Circulation

Fig. H-431 For Circulation

Fig. H-432 For Box Coil

No. 1 No. 2 No. 3

Price List Next Page

All openings in branch tees for circulation are tapped right hand.

Branch tees for box coils are always tapped left hand in branches and right hand in back inlet.

1-inch branch tees, 1-inch, 1¼-inch, 1½-inch or 2-inch run, are all 2¼ inches inside diameter.

1¼-inch branch tees are all 2½ inches inside diameter.

1½-inch branch tees are all 2¾ inches inside diameter.

2-inch branch tees are all 3½ inches inside diameter.

Always order branch tees by size and number.

Branch tees will be sent with the ends same size as the branches unless otherwise specified.

No. 1 branch tees always sent unless otherwise specified.

Branch tees tapped other than as noted above will be subject to an extra charge.

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CAST IRON FITTINGS

STANDARD BRANCH TEES

No. of Branches	1 In. Branch Tees			1¼ In. Branch Tees			1½ In. Branch Tees			2 In. Branch Tees		
	2½ in. Center to Center			3 in. Center to Center			3½ in. Center to Center			4½ in. Center to Center		
	1 in. or 1¼ in. Run	1½ in. Run	2 in. Run	1¼ in. or 1½ in. Run	2 in. Run	2½ in. Run	1½ in. or 2 in. Run	2½ in. Run	3 in. Run	2 in. Run.	2½ in. or 3 in. Run	3½ in. Run
2	.90	1.00	1.15	.....	.....	.....	.....	.....	.....	.....	.....	.....
3	1.05	1.15	1.35	1.65	1.90	2.40	2.70	3.45	3.80	5.25	5.75	6.25
4	1.15	1.30	1.60	2.00	2.40	2.85	3.35	4.15	4.60	6.40	7.00	7.75
5	1.35	1.45	1.85	2.40	2.90	3.55	4.00	5.00	5.50	7.65	8.50	9.25
6	1.60	1.75	2.10	2.80	3.30	3.95	4.65	5.75	6.25	8.80	9.75	10.75
7	1.90	2.20	2.45	3.20	3.90	4.20	5.25	6.50	7.25	10.60	11.75	13.00
8	2.20	2.45	2.75	3.60	4.50	4.95	5.85	7.00	7.75	11.50	12.75	14.00
9	2.65	2.90	3.40	4.30	5.25	6.15	6.50	8.25	9.00	12.25	13.50	15.00
10	3.15	3.30	4.00	4.80	5.85	6.85	7.60	9.25	10.00	13.50	15.00	16.50
11	3.75	4.50	4.80	5.00	6.25	7.25	8.00	9.75	10.75	14.25	15.75	18.00
12	4.40	4.75	5.10	5.25	6.50	7.65	8.50	10.50	11.50	15.00	16.50	20.00
13	5.00	5.50	6.00	6.00	7.00	8.25	.....	.....	.....	.....	.....	.....
14	.....	7.00	7.25	6.75	7.75	9.00	.....	.....	.....	.....	.....	.....
15	.....	7.50	7.75	7.50	8.50	9.75	.....	.....	.....	.....	.....	.....
16	.....	8.00	8.25	8.50	9.50	10.75	.....	.....	.....	.....	.....	.....

For recommendations as to working pressures, see page 130.

Other sizes special.

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CAST IRON FITTINGS

STANDARD WATER COLUMNS

Fig. H-433

No. 0 No. 00 Nos. 1, 2, 3, 4 No. 5 No. 6

Number	00	0	1	2	3	4	5	6
Cen. to Cen. Boiler Connections, ins.	....	....	10	12½	14	18	....	....
" " " Water Ga. Connecti'ns "	13	9½	10	12½	14	18	13⅜	17⅛
" " " Gauge Cocks "	....	....	3⅜	3¾	4¼	4	3⅝	4½
Extreme Length "	17⅝	13¼	13⅛	16½	19	22⅜	20¼	30¼
Tapped for Boiler Connections, "	....	½	½	¾	¾	1¼	....	....
" " Water Ga. Connecti'ns "	½	⅜	½	½	¾	¾	½	¾
" " Gauge Cocks "	....	....	⅜	½	½	¾	½	¾
" Top and Bottom "	1¼	¼x¾	⅜	1	¾	1¼	1¼	1¼
Each	3.00	1.50	2.75	4.00	6.00	8.00	7.50	12.00

Nos. 0 and 00 are designed especially for house heating boilers, and have no holes for gauge cocks.

With Nos. 00, 5 and 6 the connection to boiler is made from top and bottom of column.

No. 3 water column can also be supplied tapped ½ inch and 1¼ inch for boiler connection.

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CAST IRON FITTINGS

Fig. H-434

STANDARD BUSHINGS

Fig. H-435

Size..... inches	½	¾	1	1¼	1½	2	2½	3	3½
Each	.04	.05	.06	.07	.09	.14	.21	.30	.40
Galv.....each	.08	.10	.12	.14	.18	.28	.42	.60	.80
Size.....inches	4	4½	5	6	7	8	9	10	12
Each	.50	.75	.93	1.25	1.87	2.75	3.25	3.75	5.00
Galv.....each	1.00	1.50	1.85	2.50	3.75	5.50	6.50	7.50	10.00

NOTE.—Bushings reducing one size only, up to and including 2½ inches, are malleable, and will be found listed among the malleable fittings.

Bushings 3 inches and larger reducing one or more sizes are all made in cast iron.

List of Standard Sizes

Inches	Inches	Inches	Inches
½ x ¼	2½ x ¾	4½ x 2	7 x 4
¾ x ¼	2½ x 1	4½ x 2½	7 x 4¼
¾ x ⅜	2½ x 1¼	4½ x 3	7 x 5
	2½ x 1½	4½ x 3½	7 x 6
1 x ¼	3 x ¾	4½ x 4	
1 x ⅜	3 x 1	5 x 2	8 x 2
1 x ½	3 x 1¼	5 x 2½	8 x 3
	3 x 1½	5 x 3	8 x 4
	3 x 2	5 x 3½	8 x 5
1¼ x ¼	3 x 2½	5 x 4	8 x 6
1¼ x ⅜		5 x 4½	8 x 7
1¼ x ½	3½ x 1		
1¼ x ¾	3½ x 1¼	6 x 2	9 x 6
	3½ x 1½	6 x 2½	9 x 7
	3½ x 2	6 x 3	9 x 8
1½ x ⅜	3½ x 2½	6 x 3½	
1½ x ½	3½ x 3	6 x 4	10 x 4
1½ x ¾		6 x 4½	10 x 5
1½ x 1	4 x 1	6 x 5	10 x 6
	4 x 1¼		10 x 7
	4 x 1½	7 x 2	10 x 8
2 x ½	4 x 2	7 x 2½	
2 x ¾	4 x 2½	7 x 3	12 x 6
2 x 1	4 x 3	7 x 3½	12 x 8
2 x 1¼	4 x 3½		12 x 10

Other sizes special.

3 x 2 and 3 x 2½ bushings with 11½ threads per inch can be furnished at special prices.

For general description and recommendation as to working pressures, see page 130.

The list price of bushings is determined by the male thread size.

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CAST IRON FITTINGS

Fig. H-436
Regular

STANDARD PLUGS

Fig. H-437
Counter-Sunk

Size.....inches	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Fig. H-436 ....each	.02	.02	.02	.02	.03	.04	.05	.07	.10	.18	.25
Galvanized.... "	.04	.04	.04	.04	.06	.08	.10	.14	.20	.36	.50
Fig. H-437, Counter-sunk "	...	...	...	.04	.06	.08	.09	.11	.15	.30	.40
No. H-438, Left Hand. "	...	...	...	...	.06	.08	.09	.11	.15	...	...
No. H-439, Solid .... "	.04	.04	.04	.04	.06	.08	.09	.11	.15	.27	.38
No. H-440, Tap'd for Air Valve	...	...	...	...	.12	.15	.20	.25	.30	...	...

Size..... inches	3 1/2	4	4 1/2	5	6	7	8	9	10	12	...
Fig. H-436.... each	.38	.42	.65	.88	1.20	1.85	2.75	3.25	3.75	5.00	...
Galvanized.... "	.76	.84	1.30	1.75	2.40	3.70	5.50	6.50	7.50	10.00	...
No. H-439, Solid "	.57	.63	1.00	1.35	1.80	2.80	4.15	5.00	5.75	7.50	...

STANDARD BUSHINGS—ECCENTRIC

Reducing Two or More Sizes

Fig. H-441

Size..... inches	2	2 1/2	3	3 1/2	4	4 1/2	5
Each.....	.27	.42	.60	.80	1.00	1.50	1.85
Size..... inches	6	7	8	9	10	12	....
Each.....	2.50	3.75	5.50	6.50	7.50	10.00	....

2 1/2 and 3-inch Plugs, with 11 1/2 threads per inch, can be furnished at special prices.

For general description and recommendation as to working pressures, see page 130.

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CAST IRON FITTINGS

RADIATOR BUSHINGS

Ornamental

Fig. H-442

Size .....inches	2 x ½	2 x ¾	2 x 1	2 x 1¼	2 x 1½
Each	.18	.18	.17	.16	.15

RADIATOR PLUGS

Ornamental

Fig. H-443

Size .....inches	1½	2
Each	.10	.14

For general description and recommendation as to working pressures, see page 130.

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CAST IRON FITTINGS

RING PLATES

Fig. H-444

Size.....inches	½	¾	1	1¼
Black, per 100.....	5.00	5.80	6.75	7.50
Galvanized, per 100.....	6.50	7.00	8.00	9.00

TINNED STRAPS—PRESSED

Fig. H-445

Size.....inches	¼	⅜	½	¾	1	1¼	1½	2
Per lb.....	.18	.18	.18	.18	.18	.18	.18	.18

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CAST IRON FITTINGS

"WESTERN" EXPANSION PIPE HANGERS

Fig. H-446

By employing these Hangers it is possible to run a line of pipe by making use of temporary supports, and when in proper line the hangers may be adjusted.

For lists on parts, see next page.

Size.....inches	½	¾	1	1¼	1½	2	2½	3
Set each.....	.17	.17	.18	.19	.25	.29	.36	.44
Size.....inches	3½	4	4½	5	6	7	8	....
Set each.....	.55	.63	.90	1.12	1.35	1.80	2.25	....

Double the list for Galvanized.

Buttons and rings for ½-inch to 2-inch, inclusive, are tapped for ⅜-inch pipe, larger sizes for ½-inch pipe.

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CAST IRON FITTINGS

STANDARD EXPANSION PIPE HANGERS

Or Ring Hooks

Fig. H-447

Size.....inches	½	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	6	7	8
Set.....each	.17	.17	.18	.19	.25	.29	.36	.44	.55	.63	.90	1.12	1.35	1.80	2.25

Double lists for Galvanized.

PARTS OF EXPANSION PIPE HANGERS

Size.....inches	½	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	6	7	8
Plates.....each	.08	.08	.08	.08	.09	.09	.10	.10	.10	.10	.10	.10	.10	.10	.10
Buttons.... "	.06	.06	.06	.06	.07	.07	.08	.08	.08	.08	.08	.08	.08	.08	.08
Rings..... "	.08	.08	.12	.15	.20	.25	.30	.40	.50	.60	.80	1.00	1.25	1.70	2.15

Buttons and rings for ½ inch to 2 inch, inclusive, are tapped for ⅜-inch pipe; larger sizes for ½-inch pipe.

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CAST IRON FITTINGS

HOOK PLATES

Fig. H-448

SINGLE HOOKS

Fig. H-449

EXPANSION PLATES

Fig. H-450

HOOK PLATES

Figs. H-448, H-449

Number of Hooks.	1	2	3	4	5	6	7	8	9	10	11	12
For 1-inch Pipe ..	.09	.18	.23	.26	.32	.38	.48	.59	.65	.70	.85	1.00
For 1¼-inch Pipe.	.10	.21	.27	.32	.41	.52	.68	.80	.90	1.20	1.35	1.40
For 1½-inch Pipe.	.15	.28	.43	.58	.72	.88	1.10	1.25	1.40	1.55	1.65	1.90
For 2-inch Pipe ..	.22	.43	.65	.90	1.15	1.35	1.75	2.00	2.25	2.50	2.75	3.00

EXPANSION PLATES

Fig. H-450

Number of Hooks.	1	2	3	4	5	6	7	8	9	10	11	12
For 1-inch Pipe ..	.15	.25	.35	.50	.60	.70	.80	.95	1.10	1.35	1.55	1.70
For 1¼-inch Pipe.	.17	.27	.40	.60	.70	.80	.90	1.15	1.30	1.50	1.70	2.00
For 1½-inch Pipe.	.25	.40	.60	.75	.90	1.00	1.25	1.50	1.75	2.00	2.25	2.50
For 2-inch Pipe ..	.40	.60	.85	1.00	1.35	1.55	2.00	2.45	2.75	3.10	3.60	4.25

CAST IRON FITTINGS

LAUNDRY COIL STANDS

With Movable Hook Plates

Fig. H-451

No. H-452, With four Hooks for 1-inch pipe	each	$2.00
No. H-453, With six Hooks for 1-inch pipe	"	2.75
No. H-451, With eight Hooks for 1-inch pipe	"	3.50
No. H-454, With ten Hooks for 1-inch pipe	"	4.25
Extra Hooks complete, net	"	.06

BEAM HOOKS

Fig. H-455

Size.....inches	½	¾	1	1¼	1½	2	2½	3
Each	.13	.15	.18	.22	.24	.35	.65	.90

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CAST IRON FITTINGS

BEAM CLAMPS

Adjustable

Fig. H-456

Sizes.....inches	2½ to 4	4½ to 6
Each.....	.60	.80

These beam clamps are adjustable, and were designed after careful thought and study, and we believe them to be the most satisfactory clamps on the market for use in connection with steel beams. They are made of our high grade cast iron, and are strong and durable in every respect.

Only two sizes need be carried in stock for the clamps can be so adjusted as to fit I Beams from 2½ to 6-inch inclusive.

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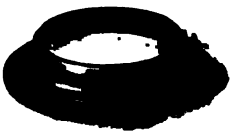
CAST IRON FITTINGS

CEILING PLATES

Fig. H 457
In Halves

Fig. H-458
One Piece



Size.....inches	½	¾	1	1¼	1½	2	2½
Fig. H-457.....each	....	.22	.28	.32	.40	.50	.65
Fig. H-458..... "	.11	.13	.16	.18	.23	.27	.36
Size.....inches	3	3½	4	4½	5	6	....
Fig. H-457.....each	.90	1.00	1.20	1.55	2.00	2.50	....
Fig. H-458..... "	.50	.55	.68	.95	.95	1.25	....

Double list for galvanized.

FLOOR PLATES

Fig. H-459
With Collar

Fig. H-460
Flat

Size.....inches	½	¾	1	1¼	1½	2	2½
Fig. H-459.....each	.06	.06	.08	.11	.14	.16	.24
Fig. H-460..... "	.06	.06	.08	.11	.14	.16	.24
Size.....inches	3	3½	4	4½	5	6	....
Fig. H-459.....each	.30	.35	.42	....	....	....	....
Fig. H-460..... "	.30	.35	.42	.60	.60	.75	....

Double list for galvanized.

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CAST IRON FITTINGS

FLOOR FLANGES

Fig. H-461

Size Pipe.....inches	⅜	⅜	½	½	½	½	¾
O. D. of Flange.....inches	3	3½	2½	3	3½	4	3
Black .....each	.14	.17	.15	.15	.17	.20	.18
Galvanized..... "	.28	.34	.30	.30	.34	.40	.36
Size Pipe.....inches	¾	¾	1	1	1	1¼	1¼
O. D. of Flange.....inches	3½	4	3½	4	5	4	4½
Black .....each	.18	.21	.20	.22	.33	.25	.30
Galvanized..... "	.36	.42	.40	.44	.66	.50	.60
Size Pipe.....inches	1¼	1½	2	2	2	2½	3
O. D. of Flange.....inches	5	4½	5	5½	6	6	7
Black .....each	.35	.31	.45	.45	.55	.55	.70
Galvanized..... "	.70	.62	.90	.90	1.10	1.10	1.40

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CAST IRON FITTINGS

COMMON FLANGES

Fig. H-462
Common

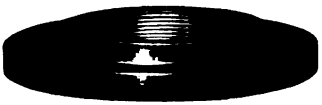

Fig. H-463
Saddle

Size of Pipe in Inches

Diameter of Flanges in Inches	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	6	7	8	9	10	12	14
3	.10																			
3½		.15	.15																	
4			.22	.16	.16															
4½					.25	.22														
5			.30	.30	.30	.30														
5½							.35													
6				.42	.40	.40	.42	.42												
6½							.50	.50	.50											
7							.62	.62	.62											
7½									.75											
8							.90	.90	.90	.90	.90									
8½										1.00	1.00									
9									1.15	1.15	1.15	1.15								
9½												1.25								
10										1.50	1.50	1.50	1.50	1.50						
11												1.75	1.75	1.75						
12													2.20	2.20	2.20					
12½													2.20	2.20	2.20					
13														2.80	2.80	2.80				
13½														2.80	2.80	2.80				
14														3.25	3.25	3.25				
15															4.00	4.00	4.00			
16			14		15		16									5.00	5.00	5.00		
17																	5.75	5.75		
18	21		9.50		9.50		....											7.00	7.00	
19	22¼		....		14.00		....											7.50	7.50	
20	23½		....		....		18.00												8.50	8.50

Other flanges of special diameters or thicknesses made to order at special prices.

For companion flanges, see page 194.

Saddle flanges, Fig. H-463, prices on application.

Above flanges furnished neither faced nor drilled unless so specified.

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CAST IRON FITTINGS

STANDARD LONG SWEEP ELBOWS

SCREWED

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-464

Size .....inches	¾	1	1¼	1½	2	2½	3	3½	4
Fig. H-464, Straight, each	.26	.32	.40	.55	.80	1.20	2.25	3.25	3.50
Straight Galv. "	.52	.64	.80	1.10	1.60	2.40	4.50	6.50	7.00
No. H-465, Reducing. "	.40	.48	.60	.83	1.20	1.80	3.38	4.88	5.25
Reducing Galv. "	.80	.96	1.20	1.66	2.40	3.60	6.76	9.76	10.50

Size .....inches	4½	5	6	7	8	9	10	12	
Fig. H-464, Straight, each	5.50	6.50	8.75	13.00	17.00	25.50	30.00	40.00	....
Straight Galv. "	11.00	13.00	17.50	26.00	34.00	51.00	60.00	80.00	....
No. H-465, Reducing. "	8.25	9.75	13.13	19.50	25.50	38.25	45.00	60.00	....
Reducing Galv. "	16.50	19.50	26.26	39.00	51.00	76.50	90.00	120.00	....

For list of reducing sizes, see page 169.

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CAST IRON FITTINGS

STANDARD LONG SWEEP DOUBLE BRANCH ELBOWS—SCREWED

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-466

Size .....inches	¾	1	1¼	1½	2	2½
Fig. H-466, Straight...each	.51	.64	.80	1.10	1.60	2.40
Straight, Galv..... "	1.02	1.28	1.60	2.20	3.20	4.80
No. H-467, Reducing .. "	.77	.96	1.20	1.65	2.40	3.60
Reducing, Galv..... "	1.54	1.92	2.40	3.30	4.80	7.20
Size .....inches	3	3½	4	4½	5	6
Fig. H-466, Straight ...each	4.50	6.50	7.00	11.00	13.00	17.50
Straight, Galv..... "	9.00	13.00	14.00	22.00	26.00	35.00
No. H-467, Reducing .. "	6.75	9.75	10.50	16.50	19.50	26.25
Reducing, Galv..... "	13.50	19.50	21.00	33.00	39.00	52.50
Size .....inches	7	8	9	10	12	....
Fig. H-466, Straight...each	26.00	34.00	51.00	60.00	80.00	....
Straight, Galv..... "	52.00	68.00	102.00	120.00	160.00	....
No. H-467, Reducing .. "	39.00	51.00	76.50	90.00	120.00	....
Reducing, Galv..... "	78.00	102.00	153.00	180.00	240.00	....

For list of reducing sizes see page 169.

In specifying double branch elbows the inlet (or the bottom opening as shown in above cut) is mentioned first, and then the branch outlets.

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CAST IRON FITTINGS

STANDARD LONG SWEEP TEES—SCREWED

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-468

Size ..... inches	¾	1	1¼	1½	2	2½
Fig. H-468, Straight ..... each	.40	.48	.60	.82	1.20	1.80
Straight, Galvanized ..... "	.80	.96	1.20	1.64	2.40	3.60
No. H-469, Reducing ..... "	.58	.72	.90	1.23	1.80	2.70
Reducing, Galvanized ..... "	1.16	1.44	1.80	2.46	3.60	5.40

Size ..... inches	3	3½	4	4½	5	6
Fig. H-468, Straight ..... each	3.40	4.90	5.25	8.25	9.75	13.25
Straight, Galvanized ..... "	6.80	9.80	10.50	16.50	19.50	26.50
No. H-469, Reducing ..... "	5.10	7.35	7.88	12.38	14.63	19.88
Reducing, Galvanized ..... "	10.20	14.70	15.76	24.76	29.26	39.76

Size ..... inches	7	8	9	10	12	....
Fig. H-468, Straight ..... each	19.50	25.50	38.00	45.00	60.00	....
Straight, Galvanized ..... "	39.00	51.00	76.00	90.00	120.00	....
No. H-469, Reducing ..... "	29.25	38.25	57.00	67.50	90.00	....
Reducing, Galvanized ..... "	58.50	76.50	114.00	135.00	180.00	....

For list of reducing sizes see page 169.

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CAST IRON FITTINGS

STANDARD LONG SWEEP CROSSES SCREWED

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-470

Size..... inches	¾	1	1¼	1½	2	2½
Price.....each	.68	.85	1.10	1.50	2.15	3.20
" Galvanized..... "	1.36	1.70	2.20	3.00	4.30	6.40
Size..... inches	3	3½	4	4½	5	6
Price.....each	6.00	8.75	9.50	15.00	17.50	24.00
" Galvanized..... "	12.00	17.50	19.00	30.00	35.00	48.00
Size..... inches	7	8	9	10	12	....
Price.....each	35.00	45.00	68.00	80.00	107.00	....
" Galvanized..... "	70.00	90.00	136.00	160.00	214.00	....

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CAST IRON FITTINGS

STANDARD LONG SWEEP FITTINGS SCREWED

Standard Sizes

ELBOWS

Inches	Inches
¾ x ¾	3 x 2½
1 x ¾	3 x 3
1 x 1	3½ x 3½
1¼ x 1	4 x 4
1¼ x 1¼	4½ x 4½
1½ x 1	5 x 5
1½ x 1¼	6 x 6
1½ x 1½	7 x 7
2 x 1¼	8 x 8
2 x 1½	9 x 9
2 x 2	10 x 10
2½ x 2	12 x 12
2½ x 2½	¾ x ¾ x ¾

DOUBLE BRANCH ELBOWS

Inches	Inches
1 x ¾ x ¾	3½ x 3 x 3
1 x 1 x 1	3½ x 3½ x 3½
1¼ x 1 x 1	4 x 3 x 3
1¼ x 1¼ x 1¼	4 x 4 x 4
1½ x 1¼ x 1¼	5 x 4 x 4
1½ x 1½ x 1½	4½ x 4½ x 4½
2 x 1½ x 1½	5 x 5 x 5
2 x 2 x 2	6 x 6 x 6
2½ x 2 x 2	7 x 7 x 7
2½ x 2½ x 2½	8 x 8 x 8
3 x 2 x 2	9 x 9 x 9
3 x 2½ x 2½	10 x 10 x 10
3 x 3 x 3	12 x 12 x 12

TEES

Inches	Inches	Inches
¾ x ¾ x ¾	2½ x 2½ x 1½	4½ x 4½ x 4½
1 x 1 x ¾	2½ x 2½ x 2	5 x 5 x 2
1 x 1 x 1	2½ x 2½ x 2½	5 x 5 x 2½
1¼ x 1¼ x 1	3 x 2½ x 2½	5 x 5 x 3
1¼ x 1¼ x 1¼	3 x 3 x 2	5 x 5 x 4
1½ x 1¼ x 1¼	3 x 3 x 2½	5 x 5 x 5
1½ x 1½ x 1¼	3 x 3 x 3	6 x 6 x 5
1½ x 1½ x 1½	3½ x 3½ x 3	6 x 6 x 6
2 x 1¼ x 1¼	3½ x 3½ x 3½	7 x 7 x 7
2 x 1½ x 1½	4 x 3 x 3	8 x 6 x 6
2 x 2 x 1¼	4 x 3½ x 3½	8 x 8 x 8
2 x 2 x 1½	4 x 4 x 2½	9 x 9 x 9
2 x 2 x 2	4 x 4 x 3	10 x 10 x 10
2½ x 2 x 2	4 x 4 x 3½	12 x 12 x 12
	4 x 4 x 4	

Sizes other than above are special and made to order only at an advanced price.

See page 166 for method of reading double branch elbows.

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CAST IRON FITTINGS

STANDARD FLANGE UNIONS

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-471
Style "A"

Fig. H-472
Style "B"

Size ..... inches	⅛	¾	1	1¼	1½	2	2½	3	3½
Diameter of Flanges ..... inches	3⅛	3⅛	3⅜	4⅛	4⅝	5¼	6	6¾	7⅜
Number of Bolts in each	3	3	4	4	4	4	4	4	4
Each	.40	.46	.52	.64	.78	1.00	1.25	1.50	1.80
Galvanized ..... each	.80	.92	1.04	1.28	1.56	2.00	2.50	3.00	3.60

Size ..... inches	4	4½	5	6	7	8	9	10	12
Diameter of Flanges ..... inches	8⅛	8¾	9⅞	10¾	12	13⅛	14½	16⅛	18
Number of Bolts in each	5	5	5	6	7	8	8	10	10
Each	2.10	2.70	3.15	3.95	5.50	7.00	10.00	11.50	16.00
Galvanized ..... each	4.20	5.40	6.30	7.90	11.00	14.00	20.00	23.00	32.00

The above flange unions are furnished faced and without gasket.
Style "B" Fig. H-472 will be furnished unless otherwise ordered.

STANDARD FLANGE UNIONS — WITH LIP

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-473

Fig. H-474

Size ..... inches	½	¾	1	1¼	1½	2	2½	3	3½
Diameter of Flanges ..... inches	3	3¼	3⅝	4⅛	4½	5⅜	6	6⅞	7⅜
Number of Bolts in each	4	4	4	4	4	4	4	4	4
Black ..... each	.60	.75	.90	1.00	1.20	1.50	1.75	2.00	2.75
Galvanized ..... "	1.00	1.25	1.50	1.65	2.00	2.50	2.90	3.35	4.55

Size ..... inches	4	4½	5	6	7	8	9	10	12
Diameter of Flanges ..... inches	8	8⅝	9½	11	12	13⅜	15	16½	18¾
Number of Bolts in each	5	5	5	6	7	8	8	10	10
Black ..... each	3.00	3.50	4.00	5.00	7.00	10.00	15.00	17.50	20.00
Galvanized ..... "	5.00	5.85	6.65	8.35	11.65	16.65	25.00	29.00	34.00

Flange unions with lip are always furnished not faced and without gasket.
Malleable flange unions will be found in malleable section.

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CAST IRON FITTINGS

FLANGE UNIONS

EXTRA HEAVY

Fig. H-475

Size ..... inches	½	¾	1	1¼	1½	2	2½	3	3½
Diam. of Flanges .. inches	3	3¼	3⅝	4¼	4½	5⅜	6	6¾	7½
Number of Bolts in Each ..	3	4	4	4	4	5	5	6	6
Each	60	.70	.80	1.00	1.15	1.50	1.90	2.25	2.70
Size ..... inches	4	4½	5	6	7	8	10	12	....
Diam. of Flanges .. inches	8	8⅝	9⅜	10¾	12	13⅜	15¾	18	....
Number of Bolts in Each ..	7	8	8	9	10	10	12	14	....
Each	3.15	4.00	4.75	6.00	8.25	10.50	17.25	24.00	....

The above flange unions are always furnished faced and without gasket.

OIL COUNTRY FLANGE UNIONS

HEAVY PATTERN

Suitable for Working Pressures up to 200 Pounds

Fig. H-476

Size ..... inches	2
Diameter of Flange ..... inches	5⅞
Number of Bolts	4
Each	1.50

Oil country flange unions are always furnished with gasket.

Malleable flange unions will be found in malleable section.

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CAST IRON FITTINGS

CAR HEATER FITTINGS

Extra Heavy

Fig. H-477

ELBOWS

Size .....inches	½	¾	1	1¼	1½x1¼	1½	2
Fig. H-477, Right Hand.....each	.22	.25	.27	.30	.45	.45	.55
No. H-478, Right and Left Hand.. "	.22	.25	.27	.30	.45	.45	.55

Fig. H-479

TEES

Size....in.	½	¾	1	1x¾x¾	1¼	1¼x¾x1¼	1¼x¾	1¼x½	1½x¾	2
Each	.30	.35	.40	.40	.45	.45	.45	.45	.65	.85

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CAST IRON FITTINGS

CAR HEATER FITTINGS

Extra Heavy

Fig. H-480

RETURN BENDS

Size.....inches	1¼	1¼	1¼	1¼	1¼	1¼	1¼
Center to Center.....inches	2½	3	4	5	6	7½	8
Each.....	.45	.50	.60	.70	.85	1.10	1.10

Fig. H-481

Cast Iron

Fig. H-483

Wrought

COUPLINGS

Size.....inches	½	¾	1	1¼	1½	2
Fig. H-481, Right Hand....each	.....	.....	.25	.30	.45	.55
No. H-482, Right and Left..... "	.....	.....	.35	.40	.55	.65
Fig. H-483, Right Hand..... "	.14	.20	.26	.34	.42	.56
No. H-484, Right and Left..... "	.20	.30	.40	.45	.55	.70

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CAST IRON FITTINGS

EXTRA HEAVY ELBOWS—SCREWED

Suitable for Steam Working Pressures up to 250 Pounds

Fig. H-485
Straight

Fig. H-486
Reducing

Fig. H-485. STRAIGHT ELBOWS

Size.....inches	½	¾	1	1¼	1½	2	2½	3	3½
Each.....	.25	.30	.35	.45	.60	.75	1.25	2.00	2.75
Galvanized, each	.50	.60	.70	.90	1.20	1.50	2.50	4.00	5.50
Size.....inches	4	4½	5	6	7	8	10	12	.....
Each.....	3.50	4.25	5.50	8.00	12.00	17.00	28.00	40.00	.....
Galvanized, each	7.00	8.50	11.00	16.00	24.00	34.00	56.00	80.00	.....

Fig. H-486. REDUCING ELBOWS

Size... .....inches	¾	1	1¼	1½	2	2½	3	3½
Each.....	.40	.45	.55	.75	.95	1.55	2.50	3.40
Galvanized.....each	.80	.90	1.10	1.50	1.90	3.10	5.00	6.80
Size.....inches	4	4½	5	6	7	8	10	12
Each.....	4.40	5.30	6.80	10.00	15.00	21.00	35.00	50.00
Galvanized.....each	8.80	10.60	13.60	20.00	30.00	42.00	70.00	100.00

No. H-487. 45° ELBOWS — Not Illustrated

Size.....inches	¾	1	1¼	1½	2	2½	3	3½
Each.....	.40	.44	.55	.70	.90	1.50	2.50	3.50
Galvanized. .....each	.80	.88	1.10	1.40	1.80	3.00	5.00	7.00
Size.....inches	4	4½	5	6	7	8	10	12
Each.....	4.50	5.50	6.75	9.75	14.50	21.00	34.00	48.00
Galvanized .....each	9.00	11.00	13.50	19.50	29.00	42.00	68.00	96.00

For list of standard reducing sizes, see page 177.

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CAST IRON FITTINGS

EXTRA HEAVY TEES—SCREWED

Suitable for Steam Working Pressures up to 250 Pounds

Fig. H-488

STRAIGHT TEES

Size .....inches	½	¾	1	1¼	1½	2	2½	3	3½
Fig. H-488, Straight.....each	.40	.45	.55	.70	.90	1.15	1.80	3.00	4.25
Galvanized..... "	.80	.90	1.10	1.40	1.80	2.30	3.60	6.00	8.50
No. H-489, Reducing..... "	...	.60	.70	.90	1.15	1.40	2.25	3.75	5.30
Reducing, Galvanized..... "	...	1.20	1.40	1.80	2.30	2.80	4.50	7.50	10.60

Size .....inches	4	4½	5	6	7	8	10	12	....
Fig. H-488, Straight.....each	5.50	6.75	8.25	12.00	18.00	25.00	42.00	60.00	....
Galvanized..... "	11.00	13.50	16.50	24.00	36.00	50.00	84.00	120.00	....
No. H-489, Reducing..... "	6.85	8.50	10.25	15.00	22.50	31.00	52.00	75.00	....
Reducing, Galvanized..... "	13.70	17.00	20.50	30.00	45.00	62.00	104.00	150.00	....

For list of standard reducing sizes, see page 177.

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CAST IRON FITTINGS

EXTRA HEAVY CROSSES—SCREWED

Suitable for Steam Working Pressures up to 250 Pounds

Fig. H-490

STRAIGHT CROSSES

Size.....inches	¾	1	1¼	1½	2	2½	3	3½
Each.....	.65	.70	.90	1.20	1.50	2.50	4.00	5.50
Galvanized.....each	1.30	1.40	1.80	2.40	3.00	5.00	8.00	11.00
Size.....inches	4	4½	5	6	7	8	10	12
Each.....	7.00	8.50	11.00	16.00	24.00	34.00	56.00	80.00
Galvanized.....each	14.00	17.00	22.00	32.00	48.00	68.00	112.00	160.00

Fig. H-491

REDUCING CROSSES

Size.....inches	¾	1	1¼	1½	2	2½	3	3½
Each.....	.85	.90	1.15	1.50	1.85	3.15	5.00	6.85
Galvanized.....each	1.70	1.80	2.30	3.00	3.70	6.30	10.00	13.70
Size.....inches	4	4½	5	6	7	8	10	12
Each.....	8.75	10.00	13.75	20.00	30.00	42.00	70.00	100.00
Galvanized.....each	17.50	20.00	27.50	40.00	60.00	84.00	140.00	200.00

See page 177 for list of Standard sizes.

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CAST IRON FITTINGS

EXTRA HEAVY—SCREWED

Standard Sizes

ELLS

Inches	Inches
½ x ½	4 x 4
¾ x ¾	4½ x 4½
1 x ¾	5 x 4
1 x 1	5 x 5
1¼ x 1	6 x 5
1¼ x 1¼	6 x 6
1½ x 1¼	7 x 7
1½ x 1½	8 x 6
2 x 1½	8 x 8
2 x 2	10 x10
2½ x 2	12 x12
2½ x 2½	.....
3 x 2½	.....
3 x 3	.....
3½ x 3½	.....
4 x 3	.....

TEES

Inches	Inches	Inches	Inches
½ x ½	2 x 2	4 x 2½	7 x 4
¾ x ¾	2½ x 1	4 x 3	7 x 5
1 x ½	2½ x 1¼	4 x 3½	7 x 7
1 x ¾	2½ x 1½	4 x 4	8 x 4
1 x 1	2½ x 2	4½ x 4½	8 x 5
1¼ x ¾	2½ x 2½	5 x 2	8 x 6
1¼ x 1	3 x 1	5 x 2½	8 x 8
1¼ x 1¼	3 x 1¼	5 x 3	10 x 4
1½ x ¾	3 x 1½	5 x 4	10 x 6
1½ x 1	3 x 2	5 x 5	10 x 8
1½ x 1¼	3 x 2½	6 x 2	10 x 10
1½ x 1½	3 x 3	6 x 2½	12 x 6
2 x ¾	3½ x 3½	6 x 3	12 x 8
2 x 1	4 x 1¼	6 x 4	12 x 10
2 x 1¼	4 x 1½	6 x 5	12 x 12
2 x 1½	4 x 2	6 x 6	.....

45° ELLS

Inches	Inches
¾ x ¾	4 x 4
1 x 1	4½ x 4½
1¼ x 1¼	5 x 5
1½ x 1½	6 x 6
2 x 2	7 x 7
2½ x 2½	8 x 8
3 x 3	10 x 10
3½ x 3½	12 x 12
.....	.....

CROSSES

Inches	Inches	Inches
¾ x ¾	2½ x 2	6 x 5
1 x ¾	2½ x 2½	6 x 6
1 x 1	3 x 2½	7 x 7
1¼ x 1	3 x 3	8 x 6
1¼ x 1¼	3½ x 3½	8 x 8
1½ x 1¼	4 x 3	10 x 10
1½ x 1½	4½ x 4½	12 x 12
2 x 1½	5 x 4	.....
2 x 2	5 x 5	.....

Fig. H-492

STANDARD STEAM TRAPS

Size.....inches	12	15	18
Each	23.00	36.00	54.00
Capacity, 1-Inch Pipe...feet	1,500	3,500	5,000

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CAST IRON FITTINGS

STANDARD ELBOWS — FLANGED

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-550

Fig. H-551

90° ELBOWS

Size Ins.	Center to Face Inches	Diam. of Flanges Inches	Price: With Flanges Faced Each	Price: With Flanges Faced and Drilled Each
1¼	3¾	4½	4.75	5.75
1½	4	5	4.75	5.75
2	4½	6	4.75	5.75
2½	5	7	5.00	6.25
3	5½	7½	5.75	7.00
3½	6	8½	6.50	7.75
4	6½	9	7.25	9.25
4½	7	9¼	9.00	11.00
5	7½	10	9.75	11.75
6	8	11	12.00	14.00
7	8½	12½	16.00	19.75
8	9	13½	20.00	23.75
9	10	15	26.00	30.00
10	11	16	32.00	36.00
12	12	19	44.00	50.00
14	14	21	58.00	65.00
15	14½	22¼	72.00	80.00
16	15	23½	84.00	93.00
18	16½	25	108.00	118.00
20	18	27½	135.00	148.00
22	20	29½	160.00	180.00
24	22	32	200.00	220.00

45° ELBOWS

Size Ins.	Center to Face Inches	Diam. of Flanges Inches	Price: With Flanges Faced Each	Price: With Flanges Faced and Drilled Each
1¼	2	4½	5.25	6.25
1½	2¼	5	5.25	6.25
2	2½	6	5.25	6.25
2½	3	7	5.50	6.75
3	3	7½	6.25	7.50
3½	3½	8½	7.25	8.50
4	4	9	8.00	10.00
4½	4	9¼	10.00	12.00
5	4½	10	10.75	12.75
6	5	11	13.00	15.00
7	5½	12½	16.00	19.75
8	5½	13½	20.00	23.75
9	6	15	26.00	30.00
10	6½	16	32.00	36.00
12	7½	19	44.00	50.00
14	7½	21	58.00	65.00
15	8	22¼	72.00	80.00
16	8	23½	84.00	93.00
18	8½	25	108.00	118.00
20	9½	27½	135.00	148.00
22	10	29½	160.00	180.00
24	11	32	200.00	220.00

Templates for drilling, see page 196.

Flanged fittings will always be furnished faced only, unless otherwise ordered.

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CAST IRON FITTINGS

STANDARD BASE ELBOWS—FLANGED

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-552

SQUARE BASE ELBOW

Size Inches	Center to Face Inches	Diam. of Flanges Inches Except Base Flanges	Center to Face of Round or Square Base Inches	Distance Across Round or Square Base Flange Inches	Size of Pipe for Supporting Round Base Elbows Inches	Prices		
						With Faced Flanges Except Base Flanges	With Faced and Drilled Flanges Except Base Flanges	Facing and Drilling Base Flanges
4	6½	9	6½	6	2	12.00	15.00	3.75
4½	7	9¼	6¾	6	2	15.00	18.00	3.75
5	7½	10	7	7	2½	16.25	19.25	3.75
6	8	11	7½	7	2½	20.00	23.00	3.75
7	8½	12½	8¼	7	2½	26.50	32.00	7.00
8	9	13½	8¾	9	4	33.50	39.00	7.00
9	10	15	9½	9	4	43.50	50.00	8.00
10	11	16	10	9	4	53.50	60.00	8.00
12	12	19	10½	11	6	74.00	83.00	11.00
14	14	21	13½	11	6	96.00	107.00	14.00
15	14½	22¼	14	11	6	120.00	132.00	15.00
16	15	23½	14¾	11	6	140.00	153.00	16.00

Templates for drilling, see page 196.

Flanged fittings will always be furnished faced only, unless otherwise ordered.

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CAST IRON FITTINGS

STANDARD LONG SWEEP ELBOWS FLANGED

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-553

Size Inches	Center to Face Inches	Radius Inches	Diameter of Flanges Inches	Price with Faced Flanges Each	Price with Faced and Drl'ed Flanges Each
4	9	7 3/8	9	14.50	18.50
4 1/2	9 1/2	7 3/4	9 1/4	18.00	22.00
5	10 1/4	8 1/2	10	19.50	23.50
6	11 1/2	9 5/8	11	24.00	28.00
7	12 3/4	10 7/8	12 1/2	32.00	39.50
8	14	12	13 1/2	40.00	47.50
9	15 1/4	13	15	52.00	60.00
10	16 1/2	14 1/8	16	64.00	72.00
12	19	16 1/2	19	88.00	100.00
14	21 1/2	18 7/8	21	116.00	130.00
15	22 3/4	20	22 1/4	144.00	160.00
16	24	21 1/4	23 1/2	168.00	186.00

Templates for drilling, see page 196.
Furnished faced only, unless otherwise ordered.

SPECIAL NOTE. IMPORTANT

We furnish two types of long sweep flanged elbows, one as above, and another with special long sweep as shown on the following page; unless otherwise specified, we will furnish long sweep flanged elbows with dimensions as above.

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CAST IRON FITTINGS

SPECIAL LONG SWEEP ELBOW—FLANGED

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-554

Size Inches	Center to Face Inches	Radius Inches	Diameter of Flanges Inches	Price, with Faced Flanges Each	Price, with Faced and Drilled Flanges, Each
4	13	11	9	14.50	18.50
4½	14	12	9¼	18.00	22.00
5	15	12¾	10	19.50	23.50
6	16	13½	11	24.00	28.00
7	17	14½	12½	32.00	39.50
8	18	15½	13½	40.00	47.50
9	20	17¼	15	52.00	60.00
10	22	19	16	64.00	72.00
12	24	20¾	19	88.00	100.00
14	26	24½	21	116.00	130.00
15	29	25½	22¼	144.00	160.00
16	30	26¼	23½	168.00	186.00

Templates for drilling, see page 196.

Flanged fittings will always be furnished faced only, unless otherwise ordered.

Special discount applicable to above, supplied on request.

SPECIAL NOTE. IMPORTANT

We furnish two types of long sweep flanged elbows: one as above with special long sweep, and one as shown on previous page. Unless otherwise specified we will furnish fittings with dimensions as shown on previous page.

CAST IRON FITTINGS

STANDARD REDUCING TAPER ELBOWS FLANGED

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-555

Size Inches	Dimensions: Center to Face Ins.	Dimensions: Diameter of Flanges Inches	Price: With Faced Flanges Each	Price: With Faced and Drilled Flanges Each	Size Inches	Dimensions: Center to Face Inches	Dimensions: Diameter of Flanges Inches	Price: With Faced Flang's Each	Price: With Faced and Drilled Flang's Each
3 x1½	5½	7½x 5	11.50	14.00	8x5	9	13½x10	40.00	47.50
3 x2	5½	7½x 6	11.50	14.00	8x6	9	13½x11	40.00	47.50
3 x2½	5½	7½x 7	11.50	14.00	9x8	10	15 x13½	52.00	60.00
3½x2½	6	8½x 7	13.00	15.50	10x5	11	16 x10	64.00	72.00
3½x3	6	8½x 7½	13.00	15.50	10x6	11	16 x11	64.00	72.00
4 x2	6½	9 x 6	14.50	18.50	10x8	11	16 x13½	64.00	72.00
4 x2½	6½	9 x 7	14.50	18.50	10x9	11	16 x15	64.00	72.00
4 x3	6½	9 x 7½	14.50	18.50	12x6	12	19 x11	88.00	100.00
5 x2½	7½	10 x 7	19.50	23.50	12x7	12	19 x12½	88.00	100.00
5 x3	7½	10 x 7½	19.50	23.50	12x8	12	19 x13½	88.00	100.00
5 x4	7½	10 x 9	19.50	23.50	12x10	12	19 x16	88.00	100.00
6 x2½	8	11 x 7	24.00	28.00	14x10	14	21 x16	116.00	130.00
6 x3	8	11 x 7½	24.00	28.00	14x12	14	21 x19	116.00	130.00
6 x3½	8	11 x 8½	24.00	28.00	15x10	14½	22¼x16	144.00	160.00
6 x4	8	11 x 9	24.00	28.00	15x12	14½	22¼x19	144.00	160.00
6 x5	8	11 x10	24.00	28.00	16x12	15	23½x19	168.00	186.00
7 x5	8½	12½x10	32.00	39.50	16x14	15	23½x21	168.00	186.00
7 x6	8½	12½x11	32.00	39.50	16x15	15	23½x22¼	168.00	186.00
8 x3½	9	13½x 8½	40.00	47.50	18x15	16½	25 x22¼	Prices on	
8 x4	9	13½x 9	40.00	47.50	30x26	25	38¾x34¼	Application	

Templates for drilling, see page 196.

Flanged fittings will always be furnished faced only, unless otherwise ordered.

CAST IRON FITTINGS

STANDARD SIDE OUTLET ELBOWS FLANGED

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-556

Fig. H-557

STRAIGHT

Size Inches	Dimensions: Center to Face of all Openings Inches	Dimensions: Diameter of Flanges Inches	Price: With Faced Flanges Each	Price: With Faced and Drilled Flanges Each
2½	5	7	Prices on Application	Prices on Application
3	5½	7½		
3½	6	8½		
4	6½	9		
4½	7	9¼		
5	7½	10		
6	8	11		
7	8½	12½		
8	9	13½		
9	10	15		
10	11	16		
12	12	19		
14	14	21		
15	14½	22¼		
16	15	23½		

REDUCING

Size Inches	Price: With Faced Flanges Each	Price: With Faced and Drilled Flanges Each
2½	Prices on Application	Prices on Application
3		
3½		
4		
4½		
5		
6		
7		
8		
9		
10		
12		
14		
15		
16		

Templates for drilling, see page 196.

For dimensions of reducing fittings, see page 202.

Flanged fittings will always be furnished faced only, unless otherwise ordered.

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CAST IRON FITTINGS

STANDARD DOUBLE BRANCH ELBOWS FLANGED

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-558

STRAIGHT

Fig. H-559

REDUCING

Size Inches	Dimensions: Center to Face Inches	Dimensions: Face to Face Inches	Dimensions: Diam. of Flanges Inches	Price: With Faced Flanges Each	Price: With Faced and Drilled Flanges Each
2	4½	9	6	Prices on Application	Prices on Application
2½	5	10	7		
3	5½	11	7½		
3½	6	12	8½		
4	6½	13	9		
4½	7	14	9¼		
5	7½	15	10		
6	8	16	11		
7	8½	17	12½		
8	9	18	13½		
9	10	20	15		
10	11	22	16		
12	12	24	19		
14	14	28	21		
15	14½	29	22¼		
16	15	30	23½		

Size Inches	Price: With Faced Flanges Each	Price: With Faced and Drilled Flanges Each
2	Prices on Application	Prices on Application
2½		
3		
3½		
4		
4½		
5		
6		
7		
8		
9		
10		
12		
14		
15		
16		

Templates for drilling, see page 196.
For dimensions of reducing fittings, see page 204.

Flanged fittings will always be furnished faced only, unless otherwise ordered.

In specifying double branch elbows the inlet (or the bottom opening as shown in above cut) is mentioned first, and then the branch outlets.

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CAST IRON FITTINGS

STANDARD TEES—FLANGED

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-560

STRAIGHT

Fig. H-561

REDUCING

Size Inches	Center to Face Inches	Face to Face Inches	Diameter of Flanges Inches	Price With Flanges Faced Each	Price With Flang's Faced and Drilled Each	Size Inches	Price With Flanges Faced Each	Price With Flang's Faced and Drilled Each
1¼	3¾	7½	4½	7.00	8.50	1½	8.00	9.50
1½	4	8	5	7.00	8.50	2	8.00	9.50
2	4½	9	6	7.00	8.50	2½	8.25	10.00
2½	5	10	7	7.25	9.00	3	9.50	11.25
3	5½	11	7½	8.25	10.00	3½	11.00	12.75
3½	6	12	8½	9.50	11.25	4	12.00	15.00
4	6½	13	9	10.50	13.50	4½	15.00	18.00
4½	7	14	9¼	13.00	16.00	5	16.25	19.25
5	7½	15	10	14.25	17.25	6	20.00	23.00
6	8	16	11	17.50	20.50	7	26.50	32.00
7	8½	17	12½	23.00	28.75	8	33.50	39.00
8	9	18	13½	29.00	34.75	9	43.50	50.00
9	10	20	15	38.00	44.00	10	53.50	60.00
10	11	22	16	46.50	52.50	12	74.00	83.00
12	12	24	19	64.00	73.00	14	96.00	107.00
14	14	28	21	84.00	95.00	15	120.00	132.00
15	14½	29	22¼	105.00	117.00	16	140.00	153.00
16	15	30	23½	122.00	135.00	18	178.00	193.00
18	16½	33	25	155.00	170.00	20	225.00	245.00
20	18	36	27½	195.00	215.00	22	265.00	295.00
22	20	40	29½	230.00	260.00	24	335.00	365.00
24	22	44	32	290.00	320.00	.....	.....	.....

Templates for drilling, see page 196.
For dimensions of reducing fittings, see page 202.

Flanged fittings will always be furnished faced only, unless otherwise ordered.

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CAST IRON FITTINGS

STANDARD TEES — FLANGED

List of Standard Sizes

Inches	Inches	Inches
2 x 2 x 2	7 x 6 x 5	12 x 12 x 6
2½ x 2½ x 2½	7 x 7 x 4	12 x 12 x 7
	7 x 7 x 5	12 x 12 x 8
3 x 3 x 2½	7 x 7 x 6	12 x 12 x 10
3 x 3 x 3	7 x 7 x 7	12 x 12 x 12
3½ x 3½ x 3½		12 x 12 x 16
	8 x 6 x 6	
4 x 3 x 4	8 x 6 x 8	14 x 10 x 10
4 x 4 x 2½	8 x 8 x 4	14 x 14 x 6
4 x 4 x 4	8 x 8 x 5	14 x 14 x 7
4½ x 4½ x 4½	8 x 8 x 6	14 x 14 x 8
	8 x 8 x 8	14 x 14 x 10
5 x 3 x 3	8 x 8 x 10	14 x 14 x 12
5 x 4 x 5		14 x 14 x 14
5 x 5 x 2½	9 x 9 x 9	
5 x 5 x 3		15 x 15 x 15
5 x 5 x 5	10 x 6 x 10	
	10 x 8 x 8	
6 x 4 x 6	10 x 8 x 10	16 x 16 x 8
6 x 5 x 3	10 x 10 x 4	16 x 16 x 10
6 x 5 x 5	10 x 10 x 5	16 x 16 x 12
6 x 5 x 6	10 x 10 x 6	16 x 16 x 16
6 x 6 x 2	10 x 10 x 8	
6 x 6 x 2½	10 x 10 x 10	18 x 18 x 18
6 x 6 x 3		
6 x 6 x 4	12 x 8 x 12	20 x 20 x 20
6 x 6 x 5	12 x 10 x 10	
6 x 6 x 6	12 x 10 x 12	22 x 22 x 22
6 x 6 x 8	12 x 12 x 5	24 x 24 x 24

We carry above sizes in stock. We are also prepared to make a large number of other sizes less commonly used, on short notice, from patterns on hand.

We can, by the use of reducing companion flanges, either concentric or eccentric, make almost any conceivable combination of openings without delay.

We call attention to table of reducing flanges on page 195; frequently money can be saved to customer and a fitting furnished better adapted to his purposes in the matter of drainage by the use of eccentric flanges. Customers who wish quick shipment of reducing fittings not shown in above list should specify "reduce by flanges (or eccentric flanges) if necessary."

See pages 202, 203, and 204 for dimensions of reducing fittings.

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CAST IRON FITTINGS

STANDARD SINGLE SWEEP TEES—FLANGED

Suitable for Steam Working Pressures up to 125 Pounds

Fig H-562

Fig. H-563

STRAIGHT

Size Inches	Center to Face Inches	Face to Face Inches	Diam. of Flanges Inches	Price: With Flanges Faced Each	Price: With Flanges Faced and Drilled Each
2	4½	9	6	8.00	9.50
2½	5	10	7	8.25	10.00
3	5½	11	7½	9.50	11.25
3½	6	12	8½	11.00	12.75
4	6½	13	9	12.00	15.00
4½	7	14	9¼	15.00	18.00
5	7½	15	10	16.25	19.25
6	8	16	11	20.00	23.00
7	8½	17	12½	26.50	32.00
8	9	18	13½	33.50	39.00
9	10	20	15	43.50	50.00
10	11	22	16	53.50	60.00
12	12	24	19	74.00	83.00
14	14	28	21	96.00	107.00
15	14½	29	22¼	120.00	132.00
16	15	30	23½	140.00	153.00
18	16½	33	25	178.00	193.00
20	18	36	27½	225.00	245.00
22	20	40	29½	265.00	295.00
24	22	44	32	335.00	365.00

REDUCING

Size Inches	Price: With Flanges Faced Each	Price: With Flanges Faced and Drilled Each
....	....	....
2½	9.50	11.25
3	11.00	12.75
3½	12.50	14.25
4	13.75	16.75
4½	17.25	20.25
5	18.75	21.75
6	23.00	26.00
7	30.00	35.50
8	38.50	44.00
9	50.00	56.50
10	61.50	68.00
12	85.00	94.00
14	110.00	121.00
15	138.00	150.00
16	160.00	173.00
18	206.00	220.00
20	258.00	278.00
22	305.00	335.00
24	385.00	415.00

Templates for drilling, see page 196.

NOTE.— Flanged fittings will always be furnished faced only, unless otherwise ordered.

For dimensions of reducing fittings, see page 202.

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CAST IRON FITTINGS

STANDARD DOUBLE SWEEP TEES FLANGED

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-564

Fig. H-565

STRAIGHT

Size Inches	Dimensions: Center to Face Inches	Dimensions: Face to Face Inches	Dimensions: Diam. of Flanges Inches	Price: With Faced Flanges Each	Price: With Faced and Drilled Flanges Each
2	4½	9	6	8.00	9.50
2½	5	10	7	8.25	10.00
3	5½	11	7½	9.50	11.25
3½	6	12	8½	11.00	12.75
4	6½	13	9	12.00	15.00
4½	7	14	9¼	15.00	18.00
5	7½	15	10	16.25	19.25
6	8	16	11	20.00	23.00
7	8½	17	12½	26.50	32.00
8	9	18	13½	33.50	39.00
9	10	20	15	43.50	50.00
10	11	22	16	53.50	60.00
12	12	24	19	74.00	83.00
14	14	28	21	96.00	107.00
15	14½	29	22¼	120.00	132.00
16	15	30	23½	140.00	153.00
18	16½	33	25	178.00	193.00
20	18	36	27½	225.00	245.00
22	20	40	29½	265.00	295.00
24	22	44	32	335.00	365.00

REDUCING

Size Inches	Price: With Faced Flanges Each	Price: With Faced and Drilled Flanges Each
2	.....	.....
2½	9.50	11.25
3	11.00	12.75
3½	12.50	14.25
4	13.75	16.75
4½	17.25	20.25
5	18.75	21.75
6	23.00	26.00
7	30.00	35.50
8	38.50	44.00
9	50.00	56.50
10	61.50	68.00
12	85.00	94.00
14	110.00	121.00
15	138.00	150.00
16	160.00	173.00
18	205.00	220.00
20	258.00	278.00
22	305.00	335.00
24	385.00	415.00

Templates for drilling, see page 196.
For dimensions of reducing fittings, see page 202.

Flanged fittings will always be furnished faced only, unless otherwise ordered.

Reducing double sweep tees are regularly made reducing on the outlet only.

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CAST IRON FITTINGS

STANDARD FOUR WAY TEES—FLANGED

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-566

Fig. H-567

STRAIGHT

Size Inches	Dimensions: Center to Face of all Openings Inches	Dimensions: Face to Face Inches	Dimensions: Diameter of Flanges Inches	Price: Faced Flanges Each	Price: Faced and Drilled Flanges Each
2	4½	9	6	Prices on Application	Prices on Application
2½	5	10	7		
3	5½	11	7½		
3½	6	12	8½		
4	6½	13	9		
4½	7	14	9¼		
5	7½	15	10		
6	8	16	11		
7	8½	17	12½		
8	9	18	13½		
9	10	20	15		
10	11	22	16		
12	12	24	19		
14	14	28	21		
15	14½	29	22¼		
16	15	30	23½		

REDUCING

Size Inches	Price: Faced Flanges Each	Price: Faced and Drilled Flanges Each
2	Prices on Application	Prices on Application
2½		
3		
3½		
4		
4½		
5		
6		
7		
8		
9		
10		
12		
14		
15		
16		

Templates for drilling, see page 196.
For dimensions of reducing fittings, see page 202.
Flanged fittings will always be furnished faced only, unless otherwise ordered.

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CAST IRON FITTINGS

STANDARD CROSSES — FLANGED

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-568

Size of Pipe Inches	Center to Face Inches	Face to Face Inches	Diameter of Flanges Inches	Straight Sizes Price: Flanges Faced Each	Straight Sizes Price: Flanges Faced and Drilled Each	Size of Pipe Inches	Reducing Sizes Price: Flanges Faced Each	Reducing Sizes Price: Flanges Faced and Drilled Each
1¼	3¾	7½	4½	9.50	11.50	....	.....	.....
1½	4	8	5	9.50	11.50	....	.....	.....
2	4½	9	6	9.50	11.50	2	11.00	13.00
2½	5	10	7	10.00	12.50	2½	11.50	14.00
3	5½	11	7½	11.50	14.00	3	13.25	15.75
3½	6	12	8½	13.00	15.50	3½	15.00	17.50
4	6½	13	9	14.50	18.50	4	16.75	20.75
4½	7	14	9¼	18.00	22.00	4½	20.75	25.00
5	7½	15	10	19.50	23.50	5	22.50	26.50
6	8	16	11	24.00	28.00	6	27.50	31.50
7	8½	17	12½	32.00	39.50	7	37.00	45.00
8	9	18	13½	40.00	47.50	8	46.00	53.50
9	10	20	15	52.00	60.00	9	60.00	68.00
10	11	22	16	64.00	72.00	10	74.00	82.00
12	12	24	19	88.00	100.00	12	100.00	112.00
14	14	28	21	116.00	130.00	14	132.00	146.00
15	14½	29	22¼	144.00	160.00	15	165.00	180.00
16	15	30	23½	168.00	186.00	16	193.00	210.00
18	16½	33	25	216.00	236.00	18	248.00	268.00
20	18	36	27½	270.00	296.00	20	310.00	335.00
22	20	40	29½	320.00	360.00	22	370.00	410.00
24	22	44	32	400.00	440.00	24	460.00	500.00

Templates for drilling, see page 196.
For dimensions of reducing fittings, see page 202.
Flanged fittings will always be furnished faced only, unless otherwise ordered.

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CAST IRON FITTINGS

STANDARD LATERALS FLANGED

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-569

Size Inches	Center to Face of Run or Outlet Inches	Face to Face of Run Inches	Diameter of Flanges Inches	Straight Sizes — Price: With Flanges Faced Each	Straight Sizes — Price: With Flanges Faced and Drilled Each	Size Inches	Reducing Sizes — Price: With Flanges Faced Each	Reducing Sizes — Price: With Flanges Faced and Drilled Each
2	8	10½	6	9.50	11.50	2	Prices on Application	Prices on Application
2½	9½	12	7	10.00	12.50	2½		
3	10	13	7½	11.50	14.00	3		
3½	11½	14½	8½	13.00	15.50	3½		
4	12	15	9	14.50	18.50	4	16.75	20.75
4½	12½	15½	9¼	18.00	22.00	4½	20.75	25.00
5	13½	17	10	19.50	23.50	5	22.50	26.50
6	14½	18	11	24.00	28.00	6	27.50	31.50
7	16½	20½	12½	32.00	39.50	7	37.00	45.00
8	17½	22	13½	40.00	47.50	8	46.00	53.50
9	19½	24	15	52.00	60.00	9	60.00	68.00
10	20½	25½	16	64.00	72.00	10	74.00	82.00
12	24½	30	19	88.00	100.00	12	100.00	112.00
14	27	33	21	116.00	130.00	14	132.00	146.00
15	28½	34½	22¼	144.00	160.00	15	165.00	180.00
16	30	36½	23½	168.00	186.00	16	193.00	210.00
18	32	39	25	216.00	236.00	18	248.00	268.00

Templates for drilling, see page 196.
For dimensions of reducing laterals, see page 203.
Flanged fittings will be furnished faced only, unless otherwise ordered.
Larger sizes made to order only. Prices on application.
Reducing laterals made to order only.

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CAST IRON FITTINGS

STANDARD TAPER REDUCERS—FLANGED

Suitable For Steam Working Pressures up to 125 Pounds

Fig. H-570

Fig. H-571

REGULAR

Size Inches	Dimensions: Face to Face Ins.	Dimensions: Diameter of Flanges Inches	Price: With Faced Flanges Each	Price: With Faced and Drilled Flanges Each
3 x2	6	7½x 6	Prices on Application	Prices on Application
3½x2½	6½	8½x 7		
4 x2	7	9 x 6		
4 x2½	7	9 x 7		
4 x3	7	9 x 7½		
5 x2	8	10 x 6		
5 x2½	8	10 x 7		
5 x3	8	10 x 7½		
5 x4	8	10 x 9		
6 x3	9	11 x 7½		
6 x3½	9	11 x 8½		
6 x4	9	11 x 9		
6 x5	9	11 x10		
7 x3	10	12½x 7½		
7 x4	10	12½x 9		
7 x5	10	12½x10		
7 x6	10	12½x11		
8 x3	11	13½x 7½		
8 x4	11	13½x 9		
8 x5	11	13½x10		
8 x6	11	13½x11		

ECCENTRIC

Size Inches	Dimensions: Face to Face Ins.	Dimensions: Diameter of Flanges Inches	Price: With Faced Flanges Each	Price: With Faced and Drilled Flanges Each
10x 4	12	16 x 9	Prices on Application	Prices on Application
10x 5	12	16 x10		
10x 6	12	16 x11		
10x 8	12	16 x13½		
12x 5	14	19 x10		
12x 6	14	19 x11		
12x 8	14	19 x13½		
12x10	14	19 x16		
14x 6	16	21 x11		
14x 8	16	21 x13½		
14x10	16	21 x16		
14x12	16	21 x19		
15x 8	17	22¼x13½		
15x10	17	22¼x16		
15x12	17	22¼x19		
15x14	17	22¼x21		
16x 8	18	23½x13½		
16x10	18	23½x16		
16x12	18	23½x19		
16x14	18	23½x21		
.....	.....	.....		

Templates for drilling, see page 196.

Furnished faced only unless otherwise ordered.

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CAST IRON FITTINGS

SPECIAL PATTERNS—FLANGED

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-572

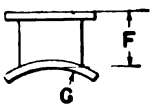


Fig. H-573

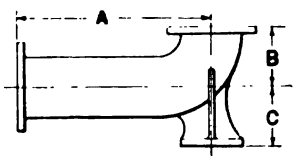


Fig. H-574

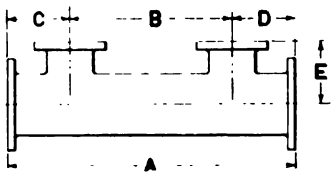


Fig. H-575

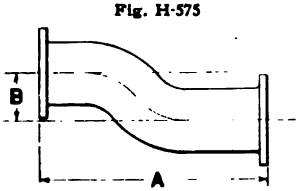
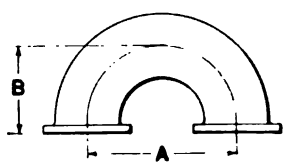


Fig H 576



We desire particularly to call attention to our unusual facilities for the prompt handling of orders covering fittings from special patterns.

We illustrate above several of such patterns. Prompt attention is given to all requests for estimates on any required design.

In requesting estimates please give the general dimensions as indicated in the illustrations.

See page 196 for table of templates for drilling.

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CAST IRON FITTINGS

STANDARD COMPANION FLANGES

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-577
Faced only

Fig. H-578
Blind Flange (Plain), Faced and Drilled
In Sizes 16-Inch O. D. and Smaller

Fig. H-579
Blind Flange (Ribbed), Faced and Drilled
In Sizes 19-Inch O. D. and Larger

THREADED FLANGES

Pipe Size and O. D. of Flange Inches	Price		Price of Bolts per Set for one Joint
	Faced Each	Faced and Drilled Each	
1 x 4	1.00	1.25	.25
1¼ x 4½	1.05	1.35	.25
1½ x 5	1.10	1.40	.25
2 x 6	1.20	1.50	.25
2½ x 7	1.40	2.00	.25
3 x 7½	1.60	2.25	.25
3½ x 8½	1.80	2.50	.25
4 x 9	2.15	3.00	.35
4½ x 9¼	2.50	3.35	.70
5 x10	2.80	3.65	.70
6 x11	3.20	4.00	.70
7 x12½	4.35	5.75	.75
8 x13½	5.00	6.50	.75
9 x15	6.75	8.25	1.15
10 x16	7.75	9.25	1.70
12 x19	10.50	12.50	1.70
14 x21	13.75	16.00	2.50
15 x21	18.00	21.00	2.50
15 x22¼	18.00	21.00	3.30
16 x23½	22.50	26.00	3.30
18 x25	27.50	31.00	5.00
20 x27½	30.00	34.00	6.20
22 x29½	33.75	39.00	8.40
24 x32	41.00	46.00	8.40

BLIND FLANGES

Pipe Size and O. D. of Flange Inches	Price	
	Faced Each	Faced and Drilled Each
.....	.....	.....
.....	.....	.....
.....	.....	.....
2 x 6	1.40	1.70
2½ x 7	1.60	2.20
3 x 7½	1.85	2.50
3½ x 8½	2.10	2.80
4 x 9	2.50	3.35
4½ x 9¼	2.90	3.75
5 x10	3.25	4.10
6 x11	3.70	4.50
7 x12½	5.00	6.40
8 x13½	5.75	7.25
9 x15	7.75	9.25
10 x16	9.00	10.60
12 x19	14.00	16.00
14 x21	17.50	19.75
15 x21	22.50	25.50
15 x22¼	22.50	25.50
16 x23½	28.00	31.50
18 x25	33.60	36.50
20 x27½	36.00	40.00
22 x29½	41.00	46.00
24 x32	50.00	55.00

Templates for drilling, see page 196.
Flanges furnished faced only unless otherwise specified.

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CAST IRON FITTINGS

STANDARD REDUCING COMPANION FLANGES

Fig. H-580

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-581

REGULAR

Pipe Size and O. D. of Flange Inches	Price Faced Each	Price Faced and Drilled Each
1½x 7	2.10	3.00
2 x 7	2.10	3.00
1½x 7½	2.40	3.35
2 x 7½	2.40	3.35
2½x 7½	2.40	3.35
2 x 8½	2.70	3.75
2½x 8½	2.70	3.75
3 x 8½	2.70	3.75
2 x 9	3.25	4.50
2½x 9	3.25	4.50
3 x 9	3.25	4.50
3½x 9	3.25	4.50
2½x 9¼	3.75	5.00
3 x 9¼	3.75	5.00
3½x 9¼	3.75	5.00
4 x 9¼	3.75	5.00
2 x10	4.25	5.50
2½x10	4.25	5.50
3 x10	4.25	5.50
3½x10	4.25	5.50
4 x10	4.25	5.50
4½x10	4.25	5.50
2 x11	4.75	6.00
2½x11	4.75	6.00
3 x11	4.75	6.00
3½x11	4.75	6.00
4 x11	4.75	6.00
4½x11	4.75	6.00
5 x11	4.75	6.00
4 x12½	6.50	8.50
4½x12½	6.50	8.50
5 x12½	6.50	8.50
6 x12½	6.50	8.50
2 x13½	7.50	9.75
2½x13½	7.50	9.75
3 x13½	7.50	9.75
4 x13½	7.50	9.75
5 x13½	7.50	9.75
6 x13½	7.50	9.75
7 x13½	7.50	9.75
6 x15	10.00	12.25
7 x15	10.00	12.25
8 x15	10.00	12.25
2½x16	11.50	14.00
3 x16	11.50	14.00
3½x16	11.50	14.00
4 x16	11.50	14.00
5 x16	11.50	14.00
6 x16	11.50	14.00
7 x16	11.50	14.00
8 x16	11.50	14.00
9 x16	11.50	14.00
6 x19	15.75	18.75
7 x19	15.75	18.75
8 x19	15.75	18.75
9 x19	15.75	18.75
10 x19	15.75	18.75
8 x21	20.00	24.00

ECCENTRIC

Pipe Size and O. D. of Flange Inches	Price Faced Each	Price Faced and Drilled Each
9x21	20.00	24.00
10x21	20.00	24.00
12x21	20.00	24.00
8x22¼	27.00	31.50
10x22¼	27.00	31.50
12x22¼	27.00	31.50
14x22¼	27.00	31.50
10x23½	34.00	39.00
12x23½	34.00	39.00
14x23½	34.00	39.00
15x23½	34.00	39.00
12x25	41.00	46.00
14x25	41.00	46.00
15x25	41.00	46.00
16x25	41.00	46.00
14x27½	45.00	51.00
15x27½	45.00	51.00
16x27½	45.00	51.00
18x27½	45.00	51.00
15x29½	50.00	58.50
16x29½	50.00	58.50
18x29½	50.00	58.50
20x29½	50.00	58.50
14x32	61.00	70.00
16x32	61.00	70.00
18x32	61.00	70.00
20x32	61.00	70.00
.....	.....	.....
.....	.....	.....

Templates for drilling, see page 196.

Furnished faced only, unless otherwise specified.

These flanges will always be the same thickness as the regular companion flanges of corresponding diameters, and drilled to the template corresponding to outside diameter, unless otherwise ordered.

We can also furnish at a special price, any size standard eccentric reducing companion flange, as per Fig. H-581 shown above, that is, with tapped opening out of center so as to bring larger and smaller pipe to same level on the bottom.

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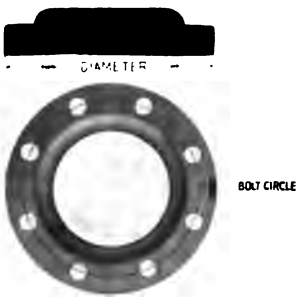
CAST IRON FITTINGS

DIMENSIONS OF STANDARD COMPANION FLANGES AND TEMPLATES FOR DRILLING

Fig. H-582



A. S. M. E. or Master Steamfitters' Standard

Size of Fitting Flange or Valve Inches	Dimensions					
	Diameter of Flanges Inches	Diameter of Bolt Circle Inches	Number of Bolts to Flange	Diameter of Flange Bolts Inches	Length of Flange Bolts for Standard Flanges, Ins.	Thickness of Flanges Inches
3/4	3 1/2	2 1/2	4	3/8	1 1/2	7/16
1	4	3	4	7/16	1 1/2	7/16
1 1/4	4 1/2	3 3/8	4	7/16	1 1/2	1/2
1 1/2	5	3 7/8	4	1/2	1 3/4	9/16
2	6	4 3/4	4	5/8	2	5/8
2 1/2	7	5 1/2	4	5/8	2 1/4	11/16
3	7 1/2	6	4	5/8	2 1/2	3/4
3 1/2	8 1/2	7	4	5/8	2 1/2	13/16
4	9	7 1/2	4	3/4	2 3/4	15/16
4 1/2	9 1/4	7 3/4	8	3/4	3	15/16
5	10	8 1/2	8	3/4	3	15/16
6	11	9 1/2	8	3/4	3	1
7	12 1/2	10 3/4	8	3/4	3 1/4	1 1/16
8	13 1/2	11 3/4	8	3/4	3 1/2	1 1/8
9	15	13 1/4	12	3/4	3 1/2	1 1/8
10	16	14 1/4	12	7/8	3 3/4	1 3/16
12	19	17	12	7/8	3 3/4	1 1/4
14	21	18 3/4	12	1	4 1/4	1 3/8
15	22 1/4	20	16	1	4 1/4	1 3/8
16	23 1/2	21 1/4	16	1	4 1/4	1 7/16
18	25	22 3/4	16	1 1/8	4 3/4	1 9/16
20	27 1/2	25	20	1 1/8	5	1 11/16
22	29 1/2	27 1/4	20	1 1/4	5 1/2	1 13/16
24	32	29 1/2	20	1 1/4	5 1/2	1 7/8

Flanges, Flanged Fittings, Valves, etc., are drilled in multiples of four, so that fittings may be made to face in any quarter and holes straddle center line.

CAST IRON FITTINGS

EXTRA NET PRICE LIST

For Attaching Companion Flanges to

STANDARD CAST IRON FLANGED FITTINGS AND VALVES

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-583

Showing Companion Flanges Bolted On

Fig. H-584

Showing Bolt Holes Spot Faced

Fig. H-585

Showing Wooden Flange Protectors Bolted On

Size of Fitting or Valve Inches	Bolting Companion Flanges to Fittings not Including Bolts or Gaskets	Wooden Protectors Bolted on with Two Bolts
	Price per Flange	Price per Flange
1¼	.10	.20
1½	.10	.20
2	.10	.20
2½	.10	.20
3	.10	.25
3½	.10	.25
4	.10	.25
4½	.15	.25
5	.15	.25
6	.15	.25
7	.15	.30
8	.15	.30
9	.20	.30
10	.20	.35
12	.20	.35
14	.20	.40
15	.25	.40
16	.25	.45

Spot facing bolt holes five cents net extra per hole.

These prices apply to both straight and reducing flanged fittings.

No gaskets furnished, unless so ordered. See pages 198, 199 for, extra charge on gaskets.

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Fig. H-586
Rubber Ring Gasket

GASKETS

For Standard Flanged Valves and Fittings

NET PRICES AND DIMENSIONS

Fig. H-587
Corrugated Copper
Full Face Gasket

Size of Valve or Fitting Inches	Ring Gaskets: 1/16 Inch Cloth Insertion Gaskets Each	1/16 Inch Rainbow Gaskets Each	1/8 Inch Asbestos Gaskets Each	Corrugated Copper Gaskets Each	Inside and Outside Diameters Inches	Full Face Gaskets: 1/16 Inch Cloth Insertion Gaskets Each	1/16 Inch Rainbow Gaskets Each	1/8 Inch Asbestos Gaskets Each	Corrugated Copper Gaskets Each	Inside and Outside Diameters Inches
3/4	.02	.04	.07	.02	3/4 x 2 1/8	.04	.08	.11	.05	3/4 x 3 1/2
1	.02	.04	.07	.02	1 x 2 9/16	.04	.08	.12	.05	1 x 4
1 1/4	.03	.06	.09	.03	1 1/4 x 2 15/16	.06	.12	.13	.06	1 1/4 x 4 1/2
1 1/2	.03	.06	.10	.04	1 1/2 x 3 3/8	.06	.12	.18	.07	1 1/2 x 5
2	.03	.08	.12	.05	2 x 4	.08	.16	.23	.10	2 x 6
2 1/2	.04	.10	.15	.06	2 1/2 x 4 7/8	.10	.20	.27	.13	2 1/2 x 7
3	.05	.12	.18	.07	3 x 5 3/8	.12	.24	.36	.14	3 x 7 1/2
3 1/2	.06	.16	.20	.09	3 1/2 x 6 3/8	.13	.32	.41	.18	3 1/2 x 8 1/2
4	.07	.18	.22	.10	4 x 6 3/4	.15	.35	.45	.19	4 x 9
4 1/2	.07	.20	.23	.11	4 1/2 x 7	.16	.40	.60	.20	4 1/2 x 9 1/4
5	.08	.24	.25	.12	5 x 7 3/4	.18	.48	.63	.23	5 x 10
6	.10	.28	.30	.13	6 x 8 3/4	.20	.56	.68	.26	6 x 11

Continued on next page.

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GASKETS

CONTINUED FROM OPPOSITE PAGE

7	.12	.32	.35	.15	7 x 10	.25	.64	.80	.32	7 x 12½
8	.13	.35	.40	.17	8 x 11	.28	.70	.90	.36	8 x 13½
9	.16	.40	.45	.23	9 x 12½	.35	.80	.95	.46	9 x 15
10	.18	.48	.60	.25	10 x 13¼	.38	.95	1.05	.50	10 x 16
12	.25	.60	.70	.36	12 x 16	.50	1.20	1.15	.65	12 x 19
14	.30	.75	.80	.38	14 x 17¾	.55	1.35	1.25	.75	14 x 21
15	.32	.85	1.00	.42	15 x 19	.65	1.55	1.35	.80	15 x 22¼
16	.35	.95	1.05	.45	16 x 20¼	.70	1.70	1.50	.90	16 x 23½
18	.37	1.10	1.10	.50	18 x 21⅝	.80	1.90	1.65	1.00	18 x 25
20	.44	1.20	1.15	.55	20 x 23⅞	.85	2.10	1.80	1.10	20 x 27½
22	.48	1.25	1.25	.60	22 x 26	.90	2.20	1.90	1.20	22 x 29½
24	.60	1.40	1.30	.70	24 x 28¼	1.10	2.50	1.95	1.40	24 x 32
26	.70	1.50	1.35	.75	26 x 30½	1.40	3.50	2.05	1.50	26 x 34¼
28	.80	2.00	1.80	1.00	28 x 32¾	1.50	3.75	2.25	1.75	28 x 36½
30	.90	2.10	2.25	1.05	30 x 34⅝	1.65	4.25	2.55	1.85	30 x 38¾

Ring gaskets will always be furnished, unless otherwise ordered.

The commercial corrugated copper gasket is made from 27-B. W. G. sheet copper, and this gauge will be furnished on all orders for standard copper gaskets. We can furnish these gaskets made from heavier sheet copper at an extra price. We can furnish gaskets made from any sheet rubber or metal that is manufactured.

All the above prices are net.

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STANDARD STRAIGHT FITTINGS—FLANGED

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-588

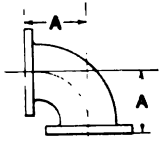


Fig. H-589

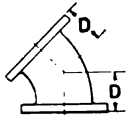


Fig. H-590

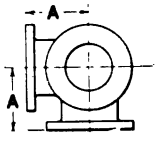


Fig. H-591

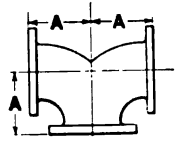


Fig. H-592

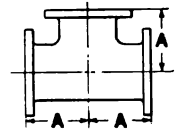


Fig. H-593

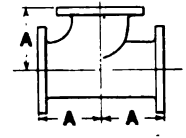


Fig. H-594

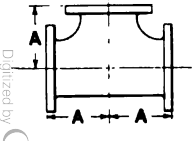


Fig. H-595

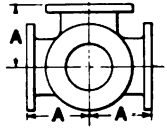


Fig. H 596

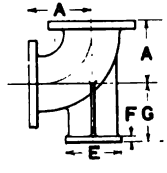


Fig. H-597

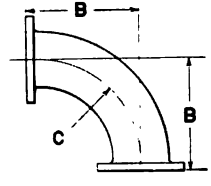
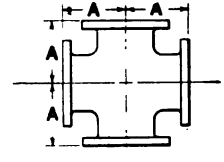


Fig. H-598



In the American Society of Mechanical Engineers' Standard (sometimes called the Master Steam Fitters' Standard) the number of bolt holes are in multiples of four, so that the fittings can be faced in any quarter. Bolt holes straddle center lines.

Two sets of dimensions are shown on opposite page for long sweep elbows. Those marked regular will be furnished unless otherwise specified.

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STANDARD STRAIGHT FITTINGS—FLANGED

Suitable for Steam Working Pressures up to 125 Pounds

DIMENSIONS, TABLE No. 1

Size.....inches	1¼	1½	2	2½	3	3½	4	4½	5	6	7	8	9	10	12	14	15	16	18	20	22	24	26	28	30
A-A—Face to Face ....inches	7½	8	9	10	11	12	13	14	15	16	17	18	20	22	24	28	29	30	33	36	40	44	46	48	50
A—Center to Face..... "	3¾	4	4½	5	5½	6	6½	7	7½	8	8½	9	10	11	12	14	14½	15	16½	18	20	22	23	24	25
B—Center to Face of Long Sweep Ells (Standard)..... "	....	....	....	....	....	....	9	9½	10¼	11½	12¾	14	15¼	16½	19	21½	22¾	24	....	....	....	....	....	....	....
C—Radius of Long Sweep Ells (Standard) ..... "	..	....	....	....	....	....	7⅜	7¾	8½	9⅝	10⅞	12	13	14⅛	16½	18⅞	20	21¼	..	.	....	....	....	....	..
B—Center to Face of Long Sweep Ells (Special)..... "	....	....	....	....	....	....	13	14	15	16	17	18	20	22	24	28	29	30	33	36	40	44	46	48	50
C—Radius of Long Sweep Ells (Special)..... "	....	....	....	....	....	....	11	12	12¾	13½	14½	15½	17⅛	19	20¾	24½	25½	26¼	29¼	32¼	36	40	42	44	45¾
D—Center to Face of 45° Ells.. "	2	2¼	2½	3	3	3½	4	4½	5	5½	5½	6	6½	7½	7½	8	8	8½	9½	10	11	13	14	15	
E—Distance Across Round or Square Base..... "	....	....	4½	4½	5	5	6	6	7	7	7	9	9	9	11	11	11	11	13½	13½	13½	13½	16	16	16
F—Thickness of Round or Square Base..... "	...	...	½	½	⅝	⅝	⅝	⅝	11/16	11/16	11/16	11/16	11/16	11/16	1	1	1	1	1⅛	1⅛	1⅛	1⅛	1 1/16	1 1/16	1 1/16
G—Center to Face of Base or Base Ells..... "	...	....	5	5½	5¾	6¼	6½	6¾	7	7½	8¼	8¾	9½	10	10½	13½	14	14¾	15½	16¾	17⅜	18¾	20	21	22

TABLE No. 2—DIMENSIONS OF FLANGES OF STANDARD FLANGED FITTINGS

A. S. M. E. or Master Steam Fitters Standard

Sizes.....inches	1¼	1½	2	2½	3	3½	4	4½	5	6	7	8	9	10	12	14	15	16	18	20	22	24	26	28	30
Diam. of Flanges..... "	4½	5	6	7	7½	8½	9	9¼	10	11	12¼	13½	15	16	19	21	22¼	23½	25	27½	29½	32	34¼	36½	38¾
Thickness of Flanges. "	1/2	9/16	5/8	11/16	¾	13/16	15/16	15/16	1	1 1/16	1 1/16	1 3/16	1 3/16	1 3/16	1¼	1⅜	1⅜	1⅜	1⅝	1⅝	1 11/16	1 11/16	1⅞	2	2 1/16	2 1/8
Number of Bolts.....	4	4	4	4	4	4	4	8	8	8	8	8	12	12	12	12	16	16	16	20	20	20	24	28	28
Size of Bolts..... "	⅞	1/2	5/8	5/8	5/8	5/8	¾	¾	¾	¾	¾	¾	¾	¾	⅞	1	1	1	1⅛	1⅛	1¼	1¼	1¼	1¼	1⅜
Length of Bolts..... "	1¾	1¾	2	2¼	2½	2½	2¾	3	3	3	3¼	3½	3½	3¾	3¾	4¼	4½	4½	4¾	5	5½	6	6	6	
Size of Bolt Holes..... "	1/2	9/16	11/16	11/16	11/16	11/16	11/16	11/16	11/16	11/16	11/16	11/16	1	1	1	1⅛	1⅛	1⅛	1⅛	1¼	1⅜	1⅜	1⅜	1⅜	1½
Diam. of Bolt Circle... "	3⅜	3⅞	4¾	5½	6	7	7½	7¾	8½	9½	10¾	11¾	13¼	14¼	17	18¾	20	21¼	22¾	25	27¼	29½	31¾	34	36

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CAST IRON FITTINGS

STANDARD REDUCING FITTINGS—FLANGED

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-599

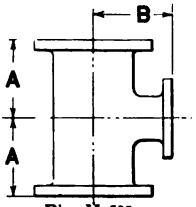


Fig. H-600

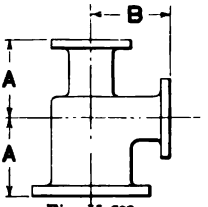


Fig. H-601

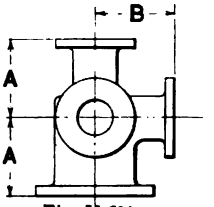


Fig. H-602

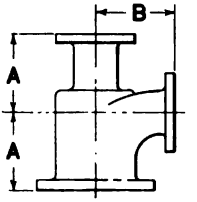


Fig. H-603

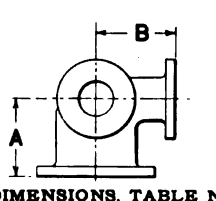
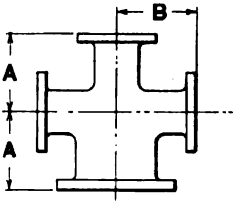


Fig. H-604



DIMENSIONS, TABLE No. 3

Dimensions of reducing fittings 1¼ to 9 inches, inclusive, with outlets smaller than large end of runs. These dimensions do not cover bull heads or tees increasing on the outlet. See foot note.

Size.....inches	1¼	1½	2	2½	3	3½	4	4½	5	6	7	8	9
AA Face to Face of Run..in.	7½	8	9	10	11	12	13	14	15	16	17	18	20
A Center to Face of Run. "	3¾	4	4½	5	5½	6	6½	7	7½	8	8½	9	10
B Center to Face, Outlets. "	3¾	4	4½	5	5½	6	6½	7	7½	8	8½	9	10

DIMENSIONS, TABLE No. 4

Dimensions of reducing fittings 10 to 30 inches, inclusive, with large outlets. These dimensions do not cover bull heads or tees increasing on outlet. See foot-note.

Size.....inches	10	12	14	15	16	18	20	22	24	26	28	30
Outlets.....inches	7 and Larger	9 and Larger	10 and Larger	10 and Larger	12 and Larger	14 and Larger	15 and Larger	15 and Larger	18 and Larger	20 and Larger	20 and Larger	22 and Larger
AA Face to Face of Run.. "	22	24	28	29	30	33	36	40	44	46	48	50
A Center to Face of Run. "	11	12	14	14½	15	16½	18	20	22	23	24	25
B Center to Face of Outlets "	11	12	14	14½	15	16½	18	20	22	23	24	25

DIMENSIONS, TABLE No. 5

Dimensions of reducing fittings 10 to 30 inches, inclusive, with smaller outlets than shown in above table. These dimensions do not cover bull heads or tees increasing on outlets. See foot note.

Size.....inches	10	12	14	15	16	18	20	22
Outlets.....inches	6 and Smaller	8 and Smaller	9 and Smaller	9 and Smaller	10 and Smaller	12 and Smaller	14 and Smaller	14 and Smaller
AA Face to Face of Run..... "	18	20	22	23	24	26	28	28
A Center to Face of Run..... "	9	10	11	11½	12	13	14	14
B Center to Face, Outlets..... "	9½	11	13	13½	14	15½	17	18

Size.....inches	24	26		28		30		.....
Outlets.....inches	16 and Smaller	8 to 18	7 and Smaller	9 to 18	8 and Smaller	10 to 20	9 and Smaller	.....
AA Face to Face of Run..... "	30	32	23	32	23	36	24	.....
A Center to Face of Run..... "	15	16	11½	16	11½	18	12	.....
B Center to Face, Outlets..... "	19	20	19½	21	20½	23	22½	.....

For dimensions of the flanges of standard flanged fittings, see table No. 2.

The face to face dimensions of flanged fittings are not changed by a reduction on the run, except in the case of double sweep tees. Dimensions of double sweep tees reducing on the run will be furnished on application.

BULL HEADS OR TEES, INCREASING ON THE OUTLETS

Tees with outlets larger than the run have the same length center to face of all openings as a tee with all openings the size of the outlets. Example: A 12 x 12 x 18 inch tee is 16½ inches center to face of all openings, the same as on 18-inch tee.

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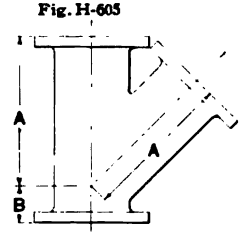
Fig. H-605



CAST IRON FITTINGS

STANDARD STRAIGHT LATERALS—FLANGED

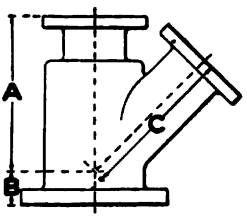
Suitable for Steam Working Pressures up to 125 Pounds

DIMENSIONS, TABLE No. 6

Size..... inches	2	2½	3	3½	4	4½	5	6	7	8	9	10
Face to Face of Run. inches	10½	12	13	14½	15	15½	17	18	20½	22	24	25½
A—Center to Face. . "	8	9½	10	11½	12	12½	13½	14½	16½	17½	19½	20½
B—Center to Face. . "	2½	2½	3	3	3	3	3½	3½	4	4½	4½	5

Size..... inches	12	14	15	16	18	20	22	24	26	28	30	...
Face to Face of Run..inches	30	33	34½	36½	39	43	46	49½	53	56½	59	....
A—Center to Face... "	24½	27	28½	30	32	35	37½	40½	43½	46½	48½	....
B—Center to Face.. "	5½	6	6	6½	7	8	8½	9	9½	10	10½	....

Fig. H-606



STANDARD REDUCING LATERALS—FLANGED

Suitable for Steam Working Pressures up to 125 Pounds

DIMENSIONS, TABLE No. 7

Size.. .....inches	4	4½	5	6	7	8	9	10
Size of Branch..... .....inches	2½ and Smaller	2½ and Smaller	3 and Smaller	3 and Smaller	5½ and Smaller	4 and Smaller	4½ and Smaller	5 and Smaller
Face to Face of Run..... "	13	13	14	15	16	16	17	18
A—Center to Face. ..... "	11	11	12	13½	14½	14½	15½	17
B—Center to Face..... "	2	2	2	1½	1½	1½	1½	1
C—Center to Face..... "	11	11	12	13½	15	15½	16½	18

Size.....inches	12	14	15	16	18	20	22	24
Size of Branch.....inches	6 and Smaller	7 and Smaller	7 and Smaller	8 and Smaller	9 and Smaller	10 and Smaller	10 and Smaller	12 and Smaller
Face to Face of Run..... "	20	22	23	24	26	28	29	32
A—Center to Face..... "	19	21	22	23	25	27	28½	31½
B—Center to Face..... "	1	1	1	1	1	1	1½	1½
C—Center to Face..... "	20½	23	24	25½	27½	29½	31½	34½

For dimensions of flanges, see table No. 2.

Dimensions of standard reducing flanged laterals above 24 inches will be furnished on application.

Laterals reducing on run only have same face to face dimensions as straight sizes.

When the branch is larger than those shown in table No. 7 use table No. 6.

We are also prepared to furnish reducing flanged laterals, at a special price, in all sizes to dimensions shown in table No. 6, when so specified.

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CAST IRON FITTINGS

STANDARD REDUCING ELBOWS—FLANGED

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-607
Taper

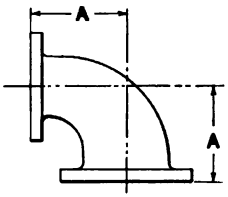
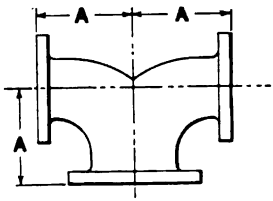


Fig. H-608
Double Branch



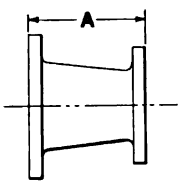
DIMENSIONS. TABLE No. 8

Size .....in.	2	2½	3	3½	4	4½	5	6	7	8	9	10	12	14	15	16
AA-Face to Face.....in.	9	10	11	12	13	14	15	16	17	18	20	22	24	28	29	30
A-Center to Face.....in.	4½	5	5½	6	6½	7	7½	8	8½	9	10	11	12	14	14½	15

STANDARD REDUCERS—FLANGED

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-609



DIMENSIONS. TABLE No. 9

Size.....in.	3-in. Reducers, 2½-in. and smaller Reductions	3½-in. Reducers, 3-in. and smaller Reductions	4-in. Reducers, 3½-in. and smaller Reductions	5-in. Reducers, 4½-in. and smaller Reductions
A-Face to Face..in.	6	6½	7	8
Size.....in.	6-in. Reducers, 5-in. and smaller Reductions	7-in. Reducers, 6-in. and smaller Reductions	8-in. Reducers, 7-in. and smaller Reductions	10-in. Reducers, 9-in. and smaller Reductions
A-Face to Face..in.	9	10	11	12
Size.....in.	12-in. Reducers, 10-in and smaller Reductions	14-in Reducers, 12-in. and smaller Reductions	15-in. Reducers, 14-in. and smaller Reductions	16-in. Reducers, 15-in. and smaller Reductions
A-Face to Face..in.	14	16	17	18

For list of sizes see page 192.
Dimensions on larger sizes furnished on request.
For dimensions of the flanges of standard flanged fittings, see table No. 2.

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CAST IRON EXTRA HEAVY FLANGED FITTINGS

GENERAL

Our flanged fittings are very carefully designed and have a generous sweep, so that in most cases the use of so-called "long radius" fittings can be avoided.

The tables of dimensions shown on pages 232 to 236, inclusive, will be of great assistance to Engineers in laying out new work.

We recommend the use of these extra heavy flanged fittings without reservation for pressures up to 250 pounds.

The dimensions of flanges used on these fittings correspond to those adopted as standard at a meeting of the leading manufacturers, held in New York in 1901. The standard adopted at that time is called the Manufacturers standard.

Male or female, tongued and grooved or raised face flanges with companion flanges to match can be furnished when desired. Unless otherwise specified, male and female and tongued and grooved valves and fittings will be furnished as follows:

Valves — both ends male.

Tees — male and female on run, female on outlet.

Elbows — male and female.

Any reasonable modifications of flange diameters, bolt circles, and thicknesses can also be made and special companion flanges supplied at an additional cost to the purchaser.

SIZES

In addition to the sizes shown on the succeeding pages, we can furnish any style of flanged fitting desired by making up patterns as required; however, in a majority of cases considerable money can be saved by using reducing flanges, either standard or eccentric.

The eccentric reducing flanges allow proper drainage, and the objection to the abrupt shoulder is one which could not be overcome in any case, except by the use of extremely long special patterns.

GALVANIZED FITTINGS

All fittings can be obtained either black or galvanized. A special price applies to galvanized fittings.

TESTED FITTINGS

We are prepared to furnish upon special order, and at a special price, fittings tested according to specifications.

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CAST IRON FITTINGS

EXTRA HEAVY ELBOWS—FLANGED

Suitable for Steam Working Pressures up to 250 Pounds

Fig. H 650
Regular

Fig. H-651
45°

Size, Inches	Dimensions		Price		Net Price			Size, Inches	Dimensions		Price		Net Price		
	Center to Face Inches	Diam. of Flanges Inches	With Faced Flanges, Each	With Faced and Drilled Flanges Each	Male or Female Tongued or Grooved Flanges, per Fitting	For 1/16-inch Raised Face for Grinding per Fitting	For Spot Facing Bolt Holes, per Fitting		Center to Face Inches	Diam. of Flanges Inches	With Faced Flanges, Each	With Faced and Drilled Flanges Each	Male or Female Tongued or Grooved Flanges, per Fitting	For 1/16-inch Raised Face for Grinding per Fitting	For Spot Facing Bolt Holes, per Fitting
1¼	4½	5	4.75	5.75	1.00	1.00	.40	1¼	2½	5	5.25	6.25	1.00	1.00	.40
1½	4½	6	4.75	5.75	1.00	1.00	.40	1½	2½	6	5.25	6.25	1.00	1.00	.40
2	5	6½	4.75	5.75	1.00	1.00	.40	2	3	6½	5.25	6.25	1.00	1.00	.40
2½	5½	7½	5.00	6.25	1.25	1.25	.40	2½	3½	7½	5.50	6.75	1.25	1.25	.40
3	6	8½	5.75	7.00	1.25	1.25	.80	3	3½	8½	6.25	7.50	1.25	1.25	.80
3½	6½	9	6.50	7.75	1.25	1.25	.80	3½	4	9	7.25	8.50	1.25	1.25	.80
4	7	10	7.25	9.25	1.25	1.25	.80	4	4½	10	8.00	10.00	1.25	1.25	.80
4½	7½	10½	9.00	11.00	1.25	1.25	.80	4½	4½	10½	10.00	12.00	1.25	1.25	.80
5	8	11	9.75	11.75	1.25	1.25	.80	5	5	11	10.75	12.75	1.25	1.25	.80
6	8½	12½	12.00	14.00	1.50	1.50	1.20	6	5½	12½	13.00	15.00	1.50	1.50	1.20
7	9	14	16.00	19.75	1.50	1.50	1.20	7	6	14	16.00	19.75	1.50	1.50	1.20
8	10	15	20.00	23.75	2.00	2.00	1.20	8	6	15	20.00	23.75	2.00	2.00	1.20
9	10½	16	26.00	30.00	2.00	2.00	1.20	9	6½	16	26.00	30.00	2.00	2.00	1.20
10	11½	17½	32.00	36.00	2.00	2.00	1.60	10	7	17½	32.00	36.00	2.00	2.00	1.60
12	13	20	44.00	50.00	2.50	2.50	1.60	12	8	20	44.00	50.00	2.50	2.50	1.60
14	14½	22½	58.00	65.00	3.25	3.25	2.00	14	8	22½	58.00	65.00	3.25	3.25	2.00
15	15	23½	72.00	80.00	3.25	3.25	2.00	15	8½	23½	72.00	80.00	3.25	3.25	2.00
16	16	25	84.00	93.00	4.00	4.00	2.00	16	9	25	84.00	93.00	4.00	4.00	2.00
18	17	27	108.00	118.00	5.00	5.00	2.40	18	9½	27	108.00	118.00	5.00	5.00	2.40
20	18½	29½	135.00	148.00	6.00	6.00	2.40	20	10	29½	135.00	148.00	6.00	6.00	2.40
22	20	31½	160.00	180.00	8.00	8.00	2.80	22	10½	31½	160.00	180.00	8.00	8.00	2.80
24	22	34	200.00	220.00	10.00	10.00	2.80	24	11½	34	200.00	220.00	10.00	10.00	2.80

Templates for drilling, see pages 224, 225.
Furnished faced only, unless otherwise ordered.

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CAST IRON FITTINGS

EXTRA HEAVY BASE ELBOWS—FLANGED

Suitable for Steam Working Pressures up to 250 Pounds

Fig. H-652
Square Base

Fig. H-653
Round Base

Size, Inches	Dimensions						Price			Net Price		
	Center to Face Inches	Diameter of Flanges Inches	Center to Face of Round or Square Base, Inches	Diameter of Round Base Flanges Inches	Side of Square Base Flanges Inches	Size of Pipe for Supporting Round Base Elbows, Inches	With Faced Flanges Each	With Faced and Drilled Flanges Each	For Facing and Drilling Base Flanges, Each	Male or Female Tongued or Grooved Flanges, per Fitting	For ⅛ inch Raised Face for Grinding per Fitting	For Spot Facing Bolt Holes per Fitting
4	7	10	7	6½	6½	2	12.00	15.00	3.75	1.25	1.25	.80
4½	7½	10½	7¼	6½	6½	2	15.00	18.00	3.75	1.25	1.25	.80
5	8	11	7½	7½	7½	2½	16.25	19.25	3.75	1.25	1.25	.80
6	8½	12½	8	7½	7½	2½	20.00	23.00	3.75	1.50	1.50	1.20
7	9	14	8¾	7½	7½	2½	26.50	32.00	7.00	1.50	1.50	1.20
8	10	15	9¼	10	10	4	33.50	39.00	7.00	2.00	2.00	1.20
9	10½	16	10	10	10	4	43.50	50.00	8.00	2.00	2.00	1.20
10	11½	17½	10½	10	10	4	53.50	60.00	8.00	2.00	2.00	1.60
12	13	20	11	12½	12½	6	74.00	83.00	11.00	2.50	2.50	1.60
14	14½	22½	14	12½	12½	6	96.00	107.00	14.00	3.25	3.25	2.00
15	15	23½	14½	12½	12½	6	110.00	122.00	15.00	3.25	3.25	2.00
16	16	25	15¼	12½	12½	6	140.00	153.00	16.00	4.00	4.00	2.00
18	17	27	15½	15	15	8	Prices on Application	Prices on Application	....	5.00	5.00	2.40
20	18½	29½	16¾	15	15	8			....	6.00	6.00	2.40
22	20	31½	17¾	17½	17½	10			....	8.00	8.00	2.80
24	22	34	18¾	17½	17½	10			....	10.00	10.00	2.80

Templates for drilling, see pages 224, 225.
Furnished faced only, unless otherwise ordered.

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CAST IRON FITTINGS

EXTRA HEAVY LONG SWEEP ELBOWS FLANGED

Suitable for Steam Working Pressures up to 250 Pounds

Fig. H-654

Size Inches	Center to Face Inches	Radius Inches	Diameter of Flanges Inches	Price		Net Price		
				Faced Each	Faced and Drilled Each	Male or Female Tongued or Grooved Flanges per Fitting	For ⅛ Raised Face for Grinding per Fitting	For Spot Facing Bolt Holes per Fitting
2	6½	5¼	6½	9.50	11.50	1.00	1.00	.40
2½	7	5⅝	7½	10.00	12.50	1.25	1.25	.40
3	7¾	6¼	8¼	11.50	14.00	1.25	1.25	.80
3½	8½	6⅞	9	13.00	15.50	1.25	1.25	.80
4	9	7⅜	10	14.50	18.50	1.25	1.25	.80
4½	9½	7¾	10½	18.00	22.00	1.25	1.25	.80
5	10¼	8½	11	19.50	23.50	1.25	1.25	.80
6	11½	9⅝	12½	24.00	28.00	1.50	1.50	1.20
7	12¾	10⅞	14	32.00	39.50	1.50	1.50	1.20
8	14	12	15	40.00	47.50	2.00	2.00	1.20
9	15¼	13	16	52.00	60.00	2.00	2.00	1.20
10	16½	14⅛	17½	64.00	72.00	2.00	2.00	1.60
12	19	16½	20	88.00	100.00	2.50	2.50	1.60
14	21½	18⅞	22½	116.00	130.00	3.25	3.25	2.00
15	22¾	20	23½	144.00	160.00	3.25	3.25	2.00
16	24	21¼	25	168.00	186.00	4.00	4.00	2.00
18	26½	23⅝	27	.....	.....	5.00	5.00	2.40
20	29	26	29½	.....	.....	6.00	6.00	2.40
22	31½	28⅜	31½	.....	.....	8.00	8.00	2.80
24	34	30¾	34	.....	.....	10.00	10.00	2.80

Templates for drilling, see pages 224, 225. Long sweep elbows not made in reducing sizes. Furnished faced only, unless otherwise ordered.

SPECIAL NOTE. IMPORTANT

We furnish two types of long sweep flanged elbows—one as above and another with special long sweep as shown on following page; unless otherwise specified we will furnish long sweep flanged elbows with dimensions as above.

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CAST IRON FITTINGS

EXTRA HEAVY SPECIAL LONG SWEEP ELBOWS — FLANGED

Suitable for Steam Working Pressures up to 250 Pounds

Fig. H-655

Size Inches	Dimensions			Price		Net Price		
	Center to Face Inches	Radius Inches	Diameter of Flanges Inches	With Faced Flanges Each	With Faced and Drilled Flanges Each	Male or Female Tongued or Grooved Flanges per Fitting	For 1/16 in. Raised Face for Grinding per Fitting	For Spot Facing Bolt Holes per Fitting
2	9	7½	6½	9.50	11.50	1.00	1.00	.40
2½	10	8½	7½	10.00	12.50	1.25	1.25	.40
3	11	9	8¼	11.50	14.00	1.25	1.25	.80
3½	12	10	9	13.00	15.50	1.25	1.25	.80
4	13	11	10	14.50	18.50	1.25	1.25	.80
4½	14	12	10½	18.00	22.00	1.25	1.25	.80
5	15	12¾	11	19.50	23.50	1.25	1.25	.80
6	16	13½	12½	24.00	28.00	1.50	1.50	1.20
7	17	14½	14	32.00	39.50	1.50	1.50	1.20
8	18	15½	15	40.00	47.50	2.00	2.00	1.20
9	20	17¼	16	52.00	60.00	2.00	2.00	1.20
10	22	19	17½	64.00	72.00	2.00	2 00	1.60
12	24	20¾	20	88.00	100.00	2.50	2.50	1.60
14	28	24½	22½	116.00	130.00	3.25	3.25	2.00
15	29	25½	23½	144.00	160.00	3.25	3.25	2.00
16	30	26¼	25	168.00	186.00	4.00	4.00	2.00
18	33	29¼	27	Prices on Application	Prices on Application	5.00	5.00	2.40
20	....	....	29½			6 00	6.00	2.40
22	....	....	31½			8.00	8.00	2.80
24	....	....	34			10.00	10.00	2.80

Long sweep flanged elbows not made in reducing sizes.

Templates for drilling, see pages 224, 225.

Furnished faced only, unless otherwise ordered.

Special discount applicable to above list furnished on request.

Above is a special pattern fitting with extra long radius.

Unless otherwise specified, long sweep elbows with dimensions as shown on previous page will be furnished.

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Fig. H-656

CAST IRON FITTINGS

EXTRA HEAVY REDUCING TAPER ELBOWS FLANGED

Suitable for Steam Working Pressures up to 250 Pounds

Size Inches	Dimensions: Center to Face Inches	Dimensions: Diameter of Flanges Inches	Price List: With Faced Flanges Each	Price List: With Faced and Drilled Flanges Each	Net Price: For Male or Female Tongued or Grooved Flanges per Fitting	Net Price: For 1/16 in. Raised Face for Grinding per Fitting	Net Price: For Spot Facing Bolt Holes per Fitting
2 x 1 1/4	5	6 1/2 x 5	9.50	11.50	1.00	1.00	.40
2 1/2 x 1 1/2	5 1/2	7 1/2 x 6	10.00	12.50	1.25	1.25	.40
2 1/2 x 2	5 1/2	7 1/2 x 6 1/2	10.00	12.50	1.25	1.25	.40
3 x 1 1/2	6	8 1/4 x 6	11.50	14.00	1.25	1.25	.80
3 x 2	6	8 1/4 x 6 1/2	11.50	14.00	1.25	1.25	.80
3 x 2 1/2	6	8 1/4 x 7 1/2	11.50	14.00	1.25	1.25	.80
3 1/2 x 2 1/2	6 1/2	9 x 7 1/2	13.00	15.50	1.25	1.25	.80
3 1/2 x 3	6 1/2	9 x 8 1/4	13.00	15.50	1.25	1.25	.80
4 x 2	7	10 x 6 1/2	14.50	18.50	1.25	1.25	.80
4 x 2 1/2	7	10 x 7 1/2	14.50	18.50	1.25	1.25	.80
4 x 3	7	10 x 8 1/4	14.50	18.50	1.25	1.25	.80
5 x 2 1/2	8	11 x 7 1/2	19.50	23.50	1.25	1.25	.80
5 x 3	8	11 x 8 1/4	19.50	23.50	1.25	1.25	.80
5 x 4	8	11 x 10	19.50	23.50	1.25	1.25	.80
6 x 3	8 1/2	12 1/2 x 8 1/4	24.00	28.00	1.50	1.50	1.20
6 x 3 1/2	8 1/2	12 1/2 x 9	24.00	28.00	1.50	1.50	1.20
6 x 4	8 1/2	12 1/2 x 10	24.00	28.00	1.50	1.50	1.20
6 x 5	8 1/2	12 1/2 x 11	24.00	28.00	1.50	1.50	1.20
7 x 4	9	14 x 10	32.00	39.50	1.50	1.50	1.20
7 x 5	9	14 x 11	32.00	39.50	1.50	1.50	1.20
7 x 6	9	14 x 12 1/2	32.00	39.50	1.50	1.50	1.20
8 x 4	10	15 x 10	40.00	47.50	2.00	2.00	1.20
8 x 5	10	15 x 11	40.00	47.50	2.00	2.00	1.20
8 x 6	10	15 x 12 1/2	40.00	47.50	2.00	2.00	1.20
8 x 7	10	15 x 14	40.00	47.50	2.00	2.00	1.20
10 x 5	11 1/2	17 1/2 x 11	64.00	72.00	2.00	2.00	1.60
10 x 6	11 1/2	17 1/2 x 12 1/2	64.00	72.00	2.00	2.00	1.60
10 x 8	11 1/2	17 1/2 x 15	64.00	72.00	2.00	2.00	1.60
12 x 7	13	20 x 14	88.00	100.00	2.50	2.50	1.60
12 x 8	13	20 x 15	88.00	100.00	2.50	2.50	1.60
12 x 10	13	20 x 17 1/2	88.00	100.00	2.50	2.50	1.60
14 x 10	14 1/2	22 1/2 x 17 1/2	116.00	130.00	3.25	3.25	2.00
14 x 12	14 1/2	22 1/2 x 20	116.00	130.00	3.25	3.25	2.00
15 x 10	15	23 1/2 x 17 1/2	144.00	160.00	3.25	3.25	2.00
15 x 12	15	23 1/2 x 20	144.00	160.00	3.25	3.25	2.00
16 x 10	16	25 x 17 1/2	168.00	186.00	4.00	4.00	2.00
16 x 12	16	25 x 20	168.00	186.00	4.00	4.00	2.00
16 x 14	16	25 x 22 1/2	168.00	186.00	4.00	4.00	2.00

Templates for drilling, see pages 224, 225. Furnished faced only unless otherwise ordered.

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CAST IRON FITTINGS

EXTRA HEAVY SIDE OUTLET ELBOWS FLANGED

Suitable for Steam Working Pressures up to 250 Pounds

Fig. H-657

Fig. H-658

REGULAR

Size, Inches	Dimensions: Center to Face of All Openings, Inches	Dimensions: Diam. of Flanges, Inches	Price: With Faced Flanges, Each	Price: With Faced and Drilled Flanges, Each	Net Price: Male or Female Tongued or Grooved Flanges, per Fitting	Net Price: For ⅛-Inch Raised Face for Grinding per Fitting	Net Price: For Spot Facing Bolt Holes, per Fitting
2½	5½	7½	Prices on Application	Prices on Application	1.75	1.75	.60
3	6	8½			1.75	1.75	1.20
3½	6½	9			1.75	1.75	1.20
4	7	10			1.75	1.75	1.20
4½	7½	10½			1.75	1.75	1.20
5	8	11			1.75	1.75	1.20
6	8½	12½			2.00	2.00	1.80
7	9	14			2.00	2.00	1.80
8	10	15			2.50	2.50	1.80
9	10½	16			2.50	2.50	1.80
10	11½	17½			2.50	2.50	2.40
12	13	20			3.00	3.00	2.40
14	14½	22½			4.00	4.00	3.00
15	15	23½			4.00	4.00	3.00
16	16	25			5.00	5.00	3.00
18	17	27			6.25	6.25	3.60
20	18½	29½			7.50	7.50	3.60
22	20	31½			10.00	10.00	4.20
24	22	34			12.50	12.50	4.20

REDUCING

Size, Inches	Price: With Faced Flanges, Each	Price: With Faced and Drilled Flanges Each	Net Price: Male or Female Tongued or Grooved Flanges, per Fitting	Net Price: For ⅛-Inch Raised Face for Grinding Per Fitting	Net Price: For Spot Facing Bolt Holes, per Fitting
2½	Prices on Application	Prices on Application	1.75	1.75	.60
3			1.75	1.75	1.20
3½			1.75	1.75	1.20
4			1.75	1.75	1.20
4½			1.75	1.75	1.20
5			1.75	1.75	1.20
6			2.00	2.00	1.80
7			2.00	2.00	1.80
8			2.50	2.50	1.80
9			2.50	2.50	1.80
10			2.50	2.50	2.40
12			3.00	3.00	2.40
14			4.00	4.00	3.00
15			4.00	4.00	3.00
16			5.00	5.00	3.00
18			6.25	6.25	3.60
20			7.50	7.50	3.60
22			10.00	10.00	4.20
24			12.50	12.50	4.20

Templates for drilling, see pages 224, 225.
For dimensions of reducing fittings, see page 234.
Reducing flanged side outlet elbows are made reducing on side outlet only.
Furnished faced only unless otherwise ordered.

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CAST IRON FITTINGS

EXTRA HEAVY DOUBLE BRANCH ELBOWS FLANGED

Suitable for Steam Working Pressures up to 250 Pounds

Fig. H-659

Fig. H-660

REGULAR

Size, inches	Dimensions: Center to Face Inches	Dimensions: Face to Face Inches	Dimensions: Diam. of Flanges Inches	Price: With Faced Flanges, each	Price: With Faced and Drilled Flanges Each	Net Price: Male or Female Tongued or Grooved Flanges, per Fitting	Net Price: For ¼-inch Raised Face for Grinding per Fitting	Net Price: For Spot Facing Bolt Holes per Fitting
2	5	10	6½	Prices on Application	Prices on Application	1.75	1.75	.60
2½	5½	11	7½			1.75	1.75	.60
3	6	12	8½			1.75	1.75	1.20
3½	6½	13	9			1.75	1.75	1.20
4	7	14	10			1.75	1.75	1.20
4½	7½	15	10½			1.75	1.75	1.20
5	8	16	11			1.75	1.75	1.20
6	8½	17	12½			2.00	2.00	1.80
7	9	18	14			2.00	2.00	1.80
8	10	20	15			2.50	2.50	1.80
9	10½	21	16			2.50	2.50	1.80
10	11½	23	17½			2.50	2.50	2.40
12	13	26	20			3.00	3.00	2.40
14	14½	29	22½			4.00	4.00	3.00
15	15	30	23½			4.00	4.00	3.00
16	16	32	25			5.00	5.00	3.00
18	17	34	27			6.25	6.25	3.60
20	18½	37	29½			7.50	7.50	3.60
22	20	40	31½			10.00	10.00	4.20
24	22	44	34			12.50	12.50	4.20

REDUCING

Size Inches	Price: With Faced Flanges, each	Price: With Faced and Drilled Flanges Each	Net Price: Male or Female Tongued or Grooved Flanges, per Fitting	Net Price: For ¼-inch Raised Face for Grinding per Fitting	Net Price: For Spot Facing Bolt Holes per Fitting
2	Prices on Application	Prices on Application	1.75	1.75	.60
2½			1.75	1.75	.60
3			1.75	1.75	1.20
3½			1.75	1.75	1.20
4			1.75	1.75	1.20
4½			1.75	1.75	1.20
5			1.75	1.75	1.20
6			2.00	2.00	1.80
7			2.00	2.00	1.80
8			2.50	2.50	1.80
9			2.50	2.50	1.80
10			2.50	2.50	2.40
12			3.00	3.00	2.40
14			4.00	4.00	3.00
15			4.00	4.00	3.00
16			5.00	5.00	3.00
18			6.25	6.25	3.60
20			7.50	7.50	3.60
22			10.00	10.00	4.20
24			12.50	12.50	4.20

Templates for drilling, see pages 224, 225.
For dimensions of reducing fittings, see page 235.

Furnished faced only unless otherwise ordered.

Flanged double branch elbows are made reducing on the run only.

In specifying double branch elbows, the inlet (or bottom opening as shown in above cut) is mentioned first, and then the branch outlets.

CAST IRON FITTINGS

EXTRA HEAVY TEES—FLANGED

Suitable for Steam Working Pressures up to 250 Pounds

Fig. H-661

STRAIGHT

Fig. H-662

REDUCING

Reducing in Run or Branch

Size, Inches	Dimensions: Center to Face Inches	Dimensions: Face to Face Inches	Dimensions: Diam. of Flanges Inches	Price: With Faced Flanges, Each	Price: With Faced and Drilled Flanges Each	Net Price: Male or Female Tongued or Grooved Flanges, per Fitting	Net Price: For $\frac{1}{16}$ Inch Raised Face for Grinding Per Fitting	Net Price: For Spot Facing Bolt Holes, per Fitting
1¼	4½	8½	5	7.00	8.50	1.25	1.25	.60
1½	4½	9	6	7.00	8.50	1.25	1.25	.60
2	5	10	6½	7.00	8.50	1.75	1.75	.60
2½	5½	11	7½	7.25	9.00	1.75	1.75	.60
3	6	12	8½	8.25	10.00	1.75	1.75	1.20
3½	6½	13	9	9.50	11.25	1.75	1.75	1.20
4	7	14	10	10.50	13.50	1.75	1.75	1.20
4½	7½	15	10½	13.00	16.00	1.75	1.75	1.20
5	8	16	11	14.25	17.25	1.75	1.75	1.20
6	8½	17	12½	17.50	20.50	2.00	2.00	1.80
7	9	18	14	23.00	28.75	2.00	2.00	1.80
8	10	20	15	29.00	34.75	2.50	2.50	1.80
9	10½	21	16	38.00	44.00	2.50	2.50	1.80
10	11½	23	17½	46.50	52.50	2.50	2.50	2.40
12	13	26	20	64.00	73.00	3.00	3.00	2.40
14	14½	29	22½	84.00	95.00	4.00	4.00	3.00
15	15	30	23½	105.00	117.00	4.00	4.00	3.00
16	16	32	25	122.00	135.00	5.00	5.00	3.00
18	17	34	27	155.00	170.00	6.25	6.25	3.60
20	18½	37	29½	195.00	215.00	7.50	7.50	3.60
22	20	40	31½	230.00	260.00	10.00	10.00	4.20
24	22	44	34	290.00	320.00	12.50	12.50	4.20

Size, Inches	Price: With Faced Flanges, Each	Price: With Faced and Drilled Flanges Each	Net Price: Male or Female Tongued or Grooved Flanges, per Fitting	Net Price: For $\frac{1}{16}$ Inch Raised Face for Grinding Per Fitting	Net Price: For Spot Facing Bolt Holes, per Fitting
1¼	....	....	1.25	1.25	.60
1½	....	....	1.25	1.25	.60
2	8.00	9.50	1.75	1.75	.60
2½	8.25	10.00	1.75	1.75	.60
3	9.50	11.25	1.75	1.75	1.20
3½	11.00	12.75	1.75	1.75	1.20
4	12.00	15.00	1.75	1.75	1.20
4½	15.00	18.00	1.75	1.75	1.20
5	16.25	19.25	1.75	1.75	1.20
6	20.00	23.00	2.00	2.00	1.80
7	26.50	32.00	2.00	2.00	1.80
8	33.50	39.00	2.50	2.50	1.80
9	43.50	50.00	2.50	2.50	1.80
10	53.50	60.00	2.50	2.50	2.40
12	74.00	83.00	3.00	3.00	2.40
14	96.00	107.00	4.00	4.00	3.00
15	120.00	132.00	4.00	4.00	3.00
16	140.00	153.00	5.00	5.00	3.00
18	178.00	193.00	6.25	6.25	3.60
20	225.00	245.00	7.50	7.50	3.60
22	265.00	295.00	10.00	10.00	4.20
24	335.00	365.00	12.50	12.50	4.20

Templates for drilling, see pages 224, 225. For dimensions of reducing fittings, see page 234. Furnished faced only, unless otherwise ordered.

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CAST IRON FITTINGS

EXTRA HEAVY TEES—FLANGED

LIST OF STANDARD SIZES

Inches	Inches	Inches
1¼ x 1¼ x 1¼	6 x 3 x 6	10 x 10 x 5
1½ x 1½ x 1½	6 x 4 x 4	10 x 10 x 6
2 x 2 x 2	6 x 4 x 6	10 x 10 x 7
2½ x 2½ x 1½	6 x 5 x 6	10 x 10 x 8
2½ x 2½ x 2	6 x 6 x 2½	10 x 10 x 10
2½ x 2½ x 2½	6 x 6 x 3	12 x 12 x 5
3 x 3 x 1½	6 x 6 x 4	12 x 12 x 6
3 x 3 x 2	6 x 6 x 5	12 x 12 x 8
3 x 3 x 3	6 x 6 x 6	12 x 12 x 10
3½ x 3½ x 3½	6 x 6 x 8	12 x 12 x 12
4 x 3 x 1½	7 x 7 x 4	14 x 14 x 6
4 x 3 x 2	7 x 7 x 5	14 x 14 x 7
4 x 3 x 4	7 x 7 x 6	14 x 14 x 8
4 x 4 x 1½	7 x 7 x 7	14 x 14 x 10
4 x 4 x 2	8 x 4 x 6	14 x 14 x 12
4 x 4 x 2½	8 x 6 x 6	14 x 14 x 11
4 x 4 x 3	8 x 6 x 8	15 x 15 x 15
4 x 4 x 4	8 x 8 x 4	16 x 16 x 6
4½ x 4½ x 4½	8 x 8 x 5	16 x 16 x 7
5 x 4 x 5	8 x 8 x 6	16 x 16 x 8
5 x 5 x 2	8 x 8 x 8	16 x 16 x 10
5 x 5 x 2½	9 x 9 x 9	16 x 16 x 16
5 x 5 x 3	10 x 8 x 6	18 x 18 x 18
5 x 5 x 4	10 x 8 x 8	20 x 20 x 20
5 x 5 x 5	10 x 8 x 10	22 x 22 x 22
6 x 2½ x 6	10 x 10 x 4	24 x 24 x 24

We carry the above sizes in stock, in limited quantities. We are also prepared to make a large number of other sizes, less commonly used, on short notice, from patterns on hand.

We can by the use of reducing companion flanges either concentric or eccentric, make almost any conceivable combination of openings without delay.

We call attention to table of reducing flanges on page 223; frequently money can be saved to customer and a fitting furnished better adapted to his purposes in the matter of drainage by the use of eccentric flanges. Customers who wish quick shipment of reducing fittings not shown in above list should specify "reduce by flanges (or eccentric flanges) if necessary."

See pages 234, 235, and 236 for dimensions of reducing fittings.

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CAST IRON FITTINGS

EXTRA HEAVY SINGLE SWEEP TEE FLANGED

Fig. H-663

Suitable for Steam Working Pressures up to 250 Pounds

Fig. H-664

SINGLE SWEEP

Size, Inches	Dimensions: Center to Face, Inches	Dimensions: Face to Face, Inches	Dimensions: Diameter of Flanges, Inches	Price: With Faced Flanges, Each	Price: With Faced and Drilled Flanges Each	Net Price: Male or Female Tongued or Grooved Flanges per Fitting	Net Price: For 1/16 inch Raised Face for Grinding per Fitting	Net Price: For Spot Facing Bolt Holes, per Fitting
2	5	10	6½	8.00	9.50	1.75	1.75	.60
2½	5½	11	7½	8.25	10.00	1.75	1.75	.60
3	6	12	8¼	9.50	11.25	1.75	1.75	1.20
3½	6½	13	9	11.00	12.75	1.75	1.75	1.20
4	7	14	10	12.00	15.00	1.75	1.75	1.20
4½	7½	15	10½	15.00	18.00	1.75	1.75	1.20
5	8	16	11	16.25	19.25	1.75	1.75	1.20
6	8½	17	12½	20.60	23.00	2.00	2.00	1.80
7	9	18	14	26.50	32.00	2.00	2.00	1.80
8	10	20	15	33.50	39.00	2.50	2.50	1.80
9	10½	21	16	43.50	50.00	2.50	2.50	1.80
10	11½	23	17½	53.50	60.00	2.50	2.50	2.40
12	13	26	20	74.00	83.00	3.00	3.00	2.40
14	14½	29	22½	96.00	107.00	4.00	4.00	3.00
15	15	30	23½	120.00	132.00	4.00	4.00	3.00
16	16	32	25	140.00	153.00	5.00	5.00	3.00
18	17	34	27	178.00	193.00	6.25	6.25	3.60
20	18½	37	29½	225.00	245.00	7.50	7.50	3.60
22	20	40	31½	265.00	295.00	10.00	10.00	4.20
24	22	44	34	335.00	365.00	12.50	12.50	4.20

REDUCING SINGLE SWEEP

Reducing in Run or Branch

Size, Inches	Price: With Faced Flanges, Each	Price: With Faced and Drilled Flanges Each	Net Price: Male or Female Tongued or Grooved Flanges, per Fitting	Net Price: For 1/16 inch Raised Face for Grinding per Fitting	Net Price: For Spot Facing Bolt Holes, per Fitting
2	.....	.....	1.75	1.75	.60
2½	9.50	11.25	1.75	1.75	.60
3	11.00	12.75	1.75	1.75	1.20
3½	12.50	14.25	1.75	1.75	1.20
4	13.75	16.75	1.75	1.75	1.20
4½	17.25	20.25	1.75	1.75	1.20
5	18.75	21.75	1.75	1.75	1.20
6	23.00	26.00	2.00	2.00	1.80
7	30.00	35.50	2.00	2.00	1.80
8	38.50	44.00	2.50	2.50	1.80
9	50.00	56.50	2.50	2.50	1.80
10	61.50	68.00	2.50	2.50	2.40
12	85.00	94.00	3.00	3.00	2.40
14	110.00	121.00	4.00	4.00	3.00
15	138.00	150.00	4.00	4.00	3.00
16	160.00	173.00	5.00	5.00	3.00
18	205.00	220.00	6.25	6.25	3.60
20	258.00	278.00	7.50	7.50	3.60
22	305.00	335.00	10.00	10.00	4.20
24	385.00	415.00	12.50	12.50	4.20

Templates for drilling, see pages 224,225. For dimensions of reducing fittings, see page 234.
We do not make single sweep flanged tees with side openings larger than the run.
Furnished face only unless otherwise ordered.

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CAST IRON FITTINGS

EXTRA HEAVY DOUBLE SWEEP TEES FLANGED

Fig. H-665

Suitable for Steam Working Pressures up to 250 Pounds

Fig. H-666

STRAIGHT

Size Inches	Dimensions: Center to Face Inches	Dimensions: Face to Face Inches	Dimensions: Diam. of Flanges Inches	Price: With Faced Flanges, Each	Price: With Faced and Drilled Flanges Each	Net Price: Male or Female Tongued or Grooved Flanges, per Fitting	Net Price: For 1/16 Inch Raised Face for Grinding per Fitting	Net Price: For Spot Facing Bolt Holes, per Fitting
2	5	10	6½	8.00	9.50	1.75	1.75	.60
2½	5½	11	7½	8.25	10.00	1.75	1.75	.60
3	6	12	8½	9.50	11.25	1.75	1.75	1.20
3½	6½	13	9	11.00	12.75	1.75	1.75	1.20
4	7	14	10	12.00	15.00	1.75	1.75	1.20
4½	7½	15	10½	15.00	18.00	1.75	1.75	1.20
5	8	16	11	16.25	19.25	1.75	1.75	1.20
6	8½	17	12½	20.00	23.00	2.00	2.00	1.80
7	9	18	14	26.50	32.00	2.00	2.00	1.80
8	10	20	15	33.50	39.00	2.50	2.50	1.80
9	10½	21	16	43.50	50.00	2.50	2.50	1.80
10	11½	23	17½	53.50	60.00	2.50	2.50	2.40
12	13	26	20	74.00	83.00	3.00	3.00	2.40
14	14½	29	22½	96.00	107.00	4.00	4.00	3.00
15	15	30	23½	120.00	132.00	4.00	4.00	3.00
16	16	32	25	140.00	153.00	5.00	5.00	3.00
18	17	34	27	178.00	193.00	6.25	6.25	3.60
20	18½	37	29½	225.00	245.00	7.50	7.50	3.60
22	20	40	31½	265.00	295.00	10.00	10.00	4.20
24	22	44	34	335.00	365.00	12.50	12.50	4.20

REDUCING

Size, Inches	Price: With Faced Flanges, Each	Price: With Faced and Drilled Flanges Each	Net Price: Male or Female Tongued or Grooved Flanges, per Fitting	Net Price: For 1/16 Inch Raised Face for Grinding per Fitting	Net Price: For Spot Facing Bolt Holes, per Fitting
2	....	....	1.75	1.75	.60
2½	9.50	11.25	1.75	1.75	.60
3	11.00	12.75	1.75	1.75	1.20
3½	12.50	14.25	1.75	1.75	1.20
4	13.75	16.75	1.75	1.75	1.20
4½	17.25	20.25	1.75	1.75	1.20
5	18.75	21.75	1.75	1.75	1.20
6	23.00	26.00	2.00	2.00	1.80
7	30.00	35.50	2.00	2.00	1.80
8	38.50	44.00	2.50	2.50	1.80
9	50.00	56.50	2.50	2.50	1.80
10	61.50	68.00	2.50	2.50	2.40
12	85.00	94.00	3.00	3.00	2.40
14	110.00	121.00	4.00	4.00	3.00
15	138.00	150.00	4.00	4.00	3.00
16	160.00	173.00	5.00	5.00	3.00
18	205.00	220.00	6.25	6.25	3.60
20	258.00	278.00	7.50	7.50	3.60
22	305.00	335.00	10.00	10.00	4.20
24	385.00	415.00	12.50	12.50	4.20

Templates for drilling, see pages 224, 225.
For dimensions of reducing fittings, see page 234.
Furnished faced only unless otherwise ordered.
Reducing double sweep tees are regularly made reducing on the outlet only.

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CAST IRON FITTINGS

EXTRA HEAVY FOUR-WAY TEES — FLANGED

Suitable for Steam Working Pressures up to 250 Pounds

Fig. H-667

REGULAR

Fig. H-668

REDUCING

Size, Inches	Dimensions: Center to Face of all Openings, Inches	Dimensions: Face to Face Inches	Dimensions: Diam. of Flanges Inches	Price: With Faced Flanges, Each	Price: With Faced and Drilled Flanges Each	Net Price: Male or Female Tongued or Grooved Flanges, per Fitting	Net Price: For ⅛ Inch Raised Face for Grinding per Fitting	Net Price: For Spot Facing Bolt Holes, per Fitting
2	5	10	6½	Prices on Application	Prices on Application	2.25	2.25	.80
2½	5½	11	7½			2.25	2.25	.80
3	6	12	8¼			2.25	2.25	1.60
3½	6½	13	9			2.25	2.25	1.60
4	7	14	10			2.25	2.25	1.60
4½	7½	15	10½			2.25	2.25	1.60
5	8	16	11			2.25	2.25	1.60
6	8½	17	12½			2.50	2.50	2.40
7	9	18	14			2.50	2.50	2.40
8	10	20	15			3.00	3.00	2.40
9	10½	21	16			3.00	3.00	2.40
10	11½	23	17½			3.00	3.00	3.20
12	13	26	20			3.50	3.50	3.20
14	14½	29	22½			5.00	5.00	4.00
15	15	30	23½			5.00	5.00	4.00
16	16	32	25			6.00	6.00	4.00
18	17	34	27			7.50	7.50	4.80
20	18½	37	29½			9.00	9.00	4.80
22	20	40	31½			10.00	10.00	5.60
24	22	44	34			12.50	12.50	5.60

Size, Inches	Price: With Faced Flanges, Each	Price: With Faced and Drilled Flanges Each	Net Price: Male or Female Tongued or Grooved Flanges, per Fitting	Net Price: For ⅛ Inch Raised Face for Grinding per Fitting	Net Price: For Spot Facing Bolt Holes, per Fitting
2	Prices on Application	Prices on Application	2.25	2.25	.80
2½			2.25	2.25	.80
3			2.25	2.25	1.60
3½			2.25	2.25	1.60
4			2.25	2.25	1.60
4½			2.25	2.25	1.60
5			2.25	2.25	1.60
6			2.50	2.50	2.40
7			2.50	2.50	2.40
8			3.00	3.00	2.40
9			3.00	3.00	2.40
10			3.00	3.00	3.20
12			3.50	3.50	3.20
14			5.00	5.00	4.00
15			5.00	5.00	4.00
16			6.00	6.00	4.00
18			7.50	7.50	4.80
20			9.00	9.00	4.80
22			10.00	10.00	5.60
24			12.50	12.50	5.60

Templates for drilling, see pages 224, 225.
For dimensions of reducing fittings, see page 234.
Furnished face only, unless otherwise ordered.

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CAST IRON FITTINGS

EXTRA HEAVY CROSSES—FLANGED

Suitable for Steam Working Pressures up to 250 Pounds

Fig. H-669

REGULAR

Fig. H-670

REDUCING

Size, Inches	Dimensions: Center to Face Inches	Dimensions: Face to Face Inches	Dimensions: Diam. of Flanges Inches	Price: With Faced Flanges Each	Price: With Faced and Drilled Flanges Each	Net Price: Male or Female Tongued or Grooved Flanges, per Fitting	Net Price: For ¼-inch Raised Face for Grinding per Fitting	Net Price: For Spot Facing Bolt Holes, per Fitting
1¼	4½	8½	5	9.50	11.50	1.75	1.75	.80
1½	4½	9	6	9.50	11.50	1.75	1.75	.80
2	5	10	6½	9.50	11.50	2.25	2.25	.80
2½	5½	11	7½	10.00	12.50	2.25	2.25	.80
3	6	12	8¼	11.50	14.00	2.25	2.25	1.60
3½	6½	13	9	13.00	15.50	2.25	2.25	1.60
4	7	14	10	14.50	18.50	2.25	2.25	1.60
4½	7½	15	10½	18.00	22.00	2.25	2.25	1.60
5	8	16	11	19.50	23.50	2.25	2.25	1.60
6	8½	17	12½	24.00	28.00	2.50	2.50	2.40
7	9	18	14	32.00	39.50	2.50	2.50	2.40
8	10	20	15	40.00	47.50	3.00	3.00	2.40
9	10½	21	16	52.00	60.00	3.00	3.00	2.40
10	11½	23	17½	64.00	72.00	3.00	3.00	3.20
12	13	26	20	88.00	100.00	3.50	3.50	3.20
14	14½	29	22½	116.00	130.00	5.00	5.00	4.00
15	15	30	23½	144.00	160 00	5.00	5.00	4.00
16	16	32	25	168.00	186.00	6.00	6.00	4.00
18	17	34	27	216.00	236.00	7.50	7.50	4.80
20	18½	37	29½	270.00	296.00	9.00	9.00	4.80
22	20	40	31½	320.00	360.00	10.00	10.00	5.60
24	22	44	34	400.00	440.00	12.50	12.50	5.60

Size, Inches	Price: With Faced Flanges Each	Price: With Faced and Drilled Flanges Each	Net Price: Male or Female Tongued or Grooved Flanges, per Fitting	Net Price: For ¼-inch Raised Face for Grinding per Fitting	Net Price: For Spot Facing Bolt Holes per Fitting
1¼	....	....	1.75	1.75	.80
1½	....	....	1.75	1.75	.80
2	11.00	13.00	2.25	2.25	.80
2½	11.50	14.00	2.25	2.25	.80
3	13.25	15.75	2.25	2.25	1.60
3½	15.00	17.50	2.25	2.25	1.60
4	16.75	20.75	2.25	2.25	1.60
4½	20.75	25.00	2.25	2.25	1.60
5	22.50	26.50	2.25	2.25	1.60
6	27.50	31.50	2.50	2.50	2.40
7	37.00	45.00	2.50	2.50	2.40
8	46.00	53.50	3.00	3.00	2.40
9	60.00	68.00	3.00	3.00	2.40
10	74.00	82.00	3.00	3.00	3.20
12	100.00	112.00	3.50	3.50	3.20
14	132.00	146.00	5.00	5.00	4.00
15	165.00	180.00	5.00	5.00	4.00
16	193.00	210.00	6.00	6.00	4.00
18	248.00	268.00	7.50	7.50	4.80
20	310.00	335.00	9.00	9.00	4.80
22	370.00	410.00	10.00	10.00	5.60
24	460.00	500.00	12.50	12.50	5.60

Templates for drilling, see pages 224, 225.
For dimensions of reducing fittings, see page 234.
Furnished faced only unless otherwise ordered.

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CAST IRON FITTINGS

EXTRA HEAVY LATERALS — FLANGED

Suitable for Steam Working Pressures up to 250 Pounds

Fig. H-671

REGULAR

Reducing in Run or Branch

Size, Inches	Dimensions: Center to Face of Run or Outlet, Ins.	Dimensions: Face to Face of Run, Inches	Dimensions: Diam. of Flanges Inches	Price: With Faced Flanges, each	Price: With Faced and Drilled Flanges Each	Net Price: Male or Female Tongued or Grooved Flanges, per Fitting	Net Price: For ½-inch Raised Face for Grinding per Fitting	Net Price: For Spot Facing Bolt Holes per Fitting
2	9	11½	6½	9.50	11.50	2.25	2.25	.80
2½	10½	13	7½	10.00	12.50	2.25	2.25	.80
3	11	14	8½	11.50	14.00	2.25	2.25	1.60
3½	12½	15½	9	13.00	15.50	2.25	2.25	1.60
4	13½	16½	10	14.50	18.50	2.25	2.25	1.60
4½	14½	18	10½	18.00	22.00	2.25	2.25	1.60
5	15	18½	11	19.50	23.50	2.25	2.25	1.60
6	17½	21½	12½	24.00	28.00	2.50	2.50	2.40
7	18½	23	14	32.00	39.50	2.50	2.50	2.40
8	20	25	15	40.00	47.50	3.00	3.00	2.40
9	21	26	16	52.00	60.00	3.00	3.00	2.40
10	23	28½	17½	64.00	72.00	3.00	3.00	3.20
12	26½	32½	20	88.00	100.00	3.50	3.50	3.20
14	30	36½	22½	116.00	130.00	5.00	5.00	4.00
15	31½	38	23½	144.00	160.00	5.00	5.00	4.00
16	33	40½	25	168.00	186.00	6.00	6.00	4.00
18	36	44	27	216.00	236.00	7.50	7.50	4.80
20	38	46½	29½	270.00	296.00	9.00	9.00	4.80
22	41½	51	31½	320.00	360.00	10.00	10.00	5.60
24	44½	54½	34	400.00	440.00	12.50	12.50	5.60

Size, Inches	Price: With Faced Flanges, each	Price: With Faced and Drilled Flanges Each	Net Price: Male or Female Tongued or Grooved Flanges, per Fitting	Net Price: For ½-inch Raised Face for Grinding per Fitting	Net Price: For Spot Facing Bolt Holes per Fitting
2	Prices on Application	Prices on Application	2.25	2.25	.80
2½			2.25	2.25	.80
3			2.25	2.25	1.60
3½			2.25	2.25	1.60
4	16.75	20.75	2.25	2.25	1.60
4½	20.75	25.00	2.25	2.25	1.60
5	22.50	26.50	2.25	2.25	1.60
6	27.50	31.50	2.50	2.50	2.40
7	37.00	45.00	2.50	2.50	2.40
8	46.00	53.50	3.00	3.00	2.40
9	60.00	68.00	3.00	3.00	2.40
10	74.00	82.00	3.00	3.00	3.20
12	100.00	112.00	3.50	3.50	3.20
14	132.00	146.00	5.00	5.00	4.00
15	165.00	180.00	5.00	5.00	4.00
16	193.00	210.00	6.00	6.00	4.00
18	248.00	268.00	7.50	7.50	4.80
20	Prices on Application	Prices on Application	9.00	9.00	4.80
22			10.00	10.00	5.60
24			12.50	12.50	5.60

Templates for drilling, see pages 224 and 225.
For dimensions of reducing fittings, see page 236.
Furnished faced only unless otherwise ordered.

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CAST IRON FITTINGS

EXTRA HEAVY TAPER REDUCERS—FLANGED

Fig. H-672

REGULAR

Suitable for Steam Working Pressures up to 250 Pounds

Fig. H-673

ECCENTRIC
Made to Order Only

Size, Inches	Dimensions: Face to Face, Inches	Dimensions: Diameter of Flanges, Inches	Price: With Faced Flanges, Each	Price: With Faced and Drilled Flanges, Each	Net Price: Male or Female Tongued or Grooved Flanges, per Fitting	Net Price: For 1/16 Inch Raised Face for Grinding, per Fitting
3x2	6	8¼x 6½	Prices on Application	Prices on Application	1.25	1.25
3½x2½	6½	9 x 7½			1.25	1.25
4x2	7	10 x 6½			1.25	1.25
4x2½	7	10 x 7¼			1.25	1.25
4x3	7	10 x 8½			1.25	1.25
5x2	8	11 x 6½			1.25	1.25
5x2½	8	11 x 7½			1.25	1.25
5x3	8	11 x 8¼			1.25	1.25
5x4	8	11 x10			1.25	1.25
6x3	9	12½x 8¼			1.50	1.50
6x3½	9	12½x 9			1.50	1.50
6x4	9	12½x10			1.50	1.50
6x5	9	12½x11			1.50	1.50
7x3	10	14 x 8¼			1.50	1.50
7x4	10	14 x10			1.50	1.50
7x5	10	14 x11			1.50	1.50
7x6	10	14 x12½			1.50	1.50
8x3	11	15 x 8¼			2.00	2.00
8x4	11	15 x10			2.00	2.00
8x5	11	15 x11			2.00	2.00
8x6	11	15 x12½			2.00	2.00
10x4	12	17½x10			2.00	2.00
10x5	12	17½x11			2.00	2.00
10x6	12	17½x12½			2.00	2.00
10x8	12	17½x15			2.00	2.00
12x5	14	20 x11			2.50	2.50
12x6	14	20 x12½			2.50	2.50
12x8	14	20 x15			2.50	2.50
12x10	14	20 x17½			2.50	2.50
14x 6	16	22½x12½	Prices on Application	Prices on Application	3.25	3.25
14x 8	16	22½x15			3.25	3.25
14x10	16	22½x17½			3.25	3.25
14x12	16	22½x20			3.25	3.25
15x 8	17	23½x15			3.25	3.25
15x10	17	23½x17½			3.25	3.25
15x12	17	23½x20			3.25	3.25
15x14	17	23½x22½			3.25	3.25
16x 8	18	25 x15			4.00	4.00
16x10	18	25 x17½			4.00	4.00
16x12	18	25 x20			4.00	4.00
16x14	18	25 x22½			4.00	4.00
18x10	19	27 x17½			5.00	5.00
18x12	19	27 x20			5.00	5.00
18x14	19	27 x22½			5.00	5.00
18x16	19	27 x25			5.00	5.00
20x12	20	29½x20			6.00	6.00
20x14	20	29½x22½			6.00	6.00
20x16	20	29½x25			6.00	6.00
20x18	20	29½x27			6.00	6.00
22x14	22	31½x22½			8.00	8.00
22x16	22	31½x25			8.00	8.00
22x18	22	31½x27			8.00	8.00
22x20	22	31½x29½			8.00	8.00
24x16	24	34 x25			10.00	10.00
24x18	24	34 x27			10.00	10.00
24x20	24	34 x29½			10.00	10.00
24x22	24	34 x31½			10.00	10.00

Templates for drilling, see pages 224, 225. Furnished faced only unless otherwise ordered. Any changes from dimensions in above table will be considered special and charged at an extra price.

CAST IRON FITTINGS

EXTRA HEAVY FITTINGS—FLANGED

SPECIAL PATTERNS

Suitable for Steam Working Pressures up to 250 Pounds

Fig. H-674

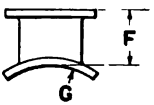


Fig. H-675

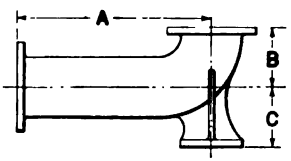


Fig. H-676

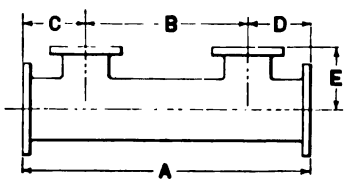


Fig. H-677

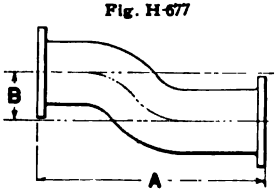
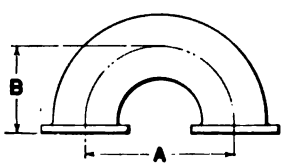


Fig. H-678



We desire to call attention to our unusual facilities for the prompt handling of orders covering Special Pattern Fittings.

We illustrate above several such patterns. Prompt attention is given to all requests for estimates on any required design. In requesting estimates please give the general dimensions as indicated in the illustration.

See pages 224 and 225 for table of templates for drilling.

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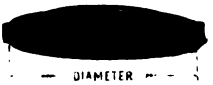
CAST IRON FITTINGS

EXTRA HEAVY COMPANION FLANGES FOR EXTRA HEAVY FITTINGS AND VALVES FLANGED

Suitable for Steam Working Pressures up to 250 Pounds

Fig. H-679
Threaded Flanges



Faced and Drilled

Fig. H-680
Plain

In Sizes 16 inches O. D. and Smaller

Fig. H-681
Ribbed

In Sizes 17½ inches O. D. and Larger
Blind Flanges, Faced and Drilled

Pipe Size and O. D. of Flange Inches	Price		Pipe Size and O. D. of Flange Inches	Price	
	Faced Each	Faced and Drilled Each		Faced Each	Faced and Drilled Each
1 x 4½	1.00	1.25	....	....	....
1¼ x 5	1.05	1.35	....	....	....
1½ x 6	1.10	1.40	....	....	....
2 x 6½	1.20	1.50	2 x 6½	1.40	1.70
2½ x 7½	1.40	2.00	2½ x 7½	1.60	2.20
3 x 8¼	1.60	2.25	3 x 8¼	1.85	2.50
3½ x 9	1.80	2.50	3½ x 9	2.10	2.80
4 x10	2.15	3.00	4 x10	2.50	3.35
4½ x10½	2.50	3.35	4½ x10½	2.90	3.75
5 x11	2.80	3.65	5 x11	3.25	4.10
6 x12½	3.20	4.00	6 x12½	3.70	4.50
7 x14	4.35	5.75	7 x14	5.00	6.40
8 x15	5.00	6.50	8 x15	5.75	7.25
9 x16	6.75	8.25	9 x16	7.75	9.25
10 x17½	7.75	9.25	10 x17½	9.00	10.60
12 x20	10.50	12.50	12 x20	14.00	16.00
14 x22½	13.75	16.00	14 x22½	17.50	19.75
15 x23½	18.00	21.00	15 x23½	22.50	25.50
16 x25	22.50	26.00	16 x25	28.00	31.50
18 x27	27.50	31.00	18 x27	33.00	36.50
20 x29½	30.00	34.00	20 x29½	36.00	40.00
22 x31½	....	....	22 x31½	41.00	46.00
24 x34	....	....	24 x34	50.00	55.00

Templates for drilling, see pages 224, 225.
Flanges furnished faced only, unless otherwise specified.

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CAST IRON FITTINGS

EXTRA HEAVY REDUCING COMPANION FLANGES

Suitable for Steam Working Pressures up to 250 Pounds

Fig. H-682
Regular

Fig. H-683
Eccentric

Pipe Size and Outside Diameter of Flange Inches	Price		Pipe Size and Outside Diameter of Flange Inches	Price		Pipe Size and Outside Diameter of Flange Inches	Price	
	Faced Each	Faced and Drilled Each		Faced Each	Faced and Drilled Each		Faced Each	Faced and Drilled Each
1½x 7½	2.10	3.00	4 x12½	4.75	6.00	10x20	15.75	18.75
2 x 7½	2.10	3.00	4½x12½	4.75	6.00	8x22½	20.00	24.00
1½x 8¼	2.40	3.35	5 x12½	4.75	6.00	9x22½	20.00	24.00
2 x 8¼	2.40	3.35	4½x14	6.50	8.50	10x22½	20.00	24.00
2½x 8¼	2.40	3.35	5 x14	6.50	8.50	12x22½	20.00	24.00
2 x 9	2.70	3.75	6 x14	6.50	8.50	8x23½	27.00	31.50
2½x 9	2.70	3.75	3 x15	7.50	9.75	10x23½	27.00	31.50
3 x 9	2.70	3.75	3½x15	7.50	9.75	12x23½	27.00	31.50
2 x10	3.25	4.50	4 x15	7.50	9.75	14x23½	27.00	31.50
2½x10	3.25	4.50	5 x15	7.50	9.75	10x25	34.00	39.00
3 x10	3.25	4.50	6 x15	7.50	9.75	12x25	34.00	39.00
3½x10	3.25	4.50	7 x15	7.50	9.75	14x25	34.00	39.00
2 x10½	3.75	5.00	4 x16	10.00	12.25	15x25	34.00	39.00
2½x10½	3.75	5.00	5 x16	10.00	12.25	12x27	41.00	46.00
3 x10½	3.75	5.00	6 x16	10.00	12.25	14x27	41.00	46.00
3½x10½	3.75	5.00	7 x16	10.00	12.25	15x27	41.00	46.00
4 x10½	3.75	5.00	8 x16	10.00	12.25	16x27	41.00	46.00
2 x11	4.25	5.50	5 x17½	11.50	14.00	14x29½	45.00	51.00
2½x11	4.25	5.50	6 x17½	11.50	14.00	15x29½	45.00	51.00
3 x11	4.25	5.50	7 x17½	11.50	14.00	16x29½	45.00	51.00
3½x11	4.25	5.50	8 x17½	11.50	14.00	18x29½	45.00	51.00
4 x11	4.25	5.50	9 x17½	11.50	14.00	16x31½	50.00	58.50
4½x11	4.25	5.50	6 x20	15.75	18.75	18x31½	50.00	58.50
2 x12½	4.75	6.00	7 x20	15.75	18.75	20x31½	50.00	58.50
2½x12½	4.75	6.00	8 x20	15.75	18.75	18x34	61.00	70.00
3 x12½	4.75	6.00	9 x20	15.75	18.75	20x34	61.00	70.00

Templates for drilling, see pages 224, 225.

Furnished faced only unless otherwise ordered.

These flanges will always be the same thickness as the regular companion flanges of corresponding outside diameters, and drilled to the template corresponding to outside diameter, unless otherwise ordered.

We can also furnish any size extra heavy eccentric reducing companion flange as shown above, that is, with tapped opening out of center so as to bring larger and smaller pipes to same level on the bottom. Prices on application.

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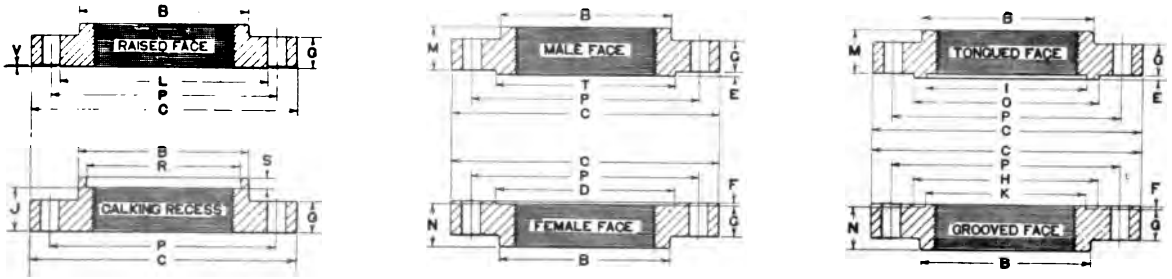
DIMENSIONS OF EXTRA HEAVY COMPANION FLANGES

Templates for Drilling

Fig. H-684



Extra net prices for special facing, see page 227.

Plain Face Flanges are not shown in above diagram but will have same dimensions as male flange without the male projection.

Two sets of dimensions are shown on opposite page for E, F, T and D. Those marked regular will be furnished unless otherwise specified.

The length, center to face and face to face of male, female, tongued or grooved extra heavy companion flanges, flanged fittings and extra heavy and medium valves, as shown on opposite page, are from face of flanges and not from projection or recess. In the case of RAISED FACE flanges, however, these dimensions will always be taken from the raised face.

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DIMENSIONS OF EXTRA HEAVY COMPANION FLANGES

Manufacturers' Standard. Templates for Drilling

Size.....inches	1	1¼	1½	2	2½	3	3½	4	4½	5	6	7	8	9	10	12	14	15	16	18	20	22	24
B—Diameter of Hub.....ins.	2 1/16	2 1/2	2 7/8	3 5/16	4	4 5/8	5 1/4	5 3/4	6 3/16	6 3/4	7 11/16	9	10 1/8	11 1/8	12 3/8	14 5/8	15 3/8	16 1/2	18	20 1/8	22 1/4	24 1/2	26 3/4
C—Diameter of Flange..... "	4 1/2	5	6	6 1/2	7 1/2	8 1/4	9	10	10 1/2	11	12 1/2	14	15	16	17 1/2	20	22 1/4	23 1/2	25	27	29 1/2	31 1/2	34
G—Thickness of Flange..... "	11/16	13/16	15/16	15/16	1	1 1/16	1 1/16	1 1/16	1 1/16	1 3/16	1 1/16	1 1/16	1 1/16	1 3/16	1 3/16	1 3/8	2	2 1/8	2 1/4	2 1/4	2 5/8	2 3/4	2 7/8
J—Length of Pipe Thread..... "	1	1 1/8	1 1/4	1 1/8	1 1/16	1 1/16	1 1/8	1 1/4	1 1/16	1 1/8	2	2 1/16	2 1/16	2 1/4	2 3/8	2 1/16	2 1/16	2 1/16	2 1/16	2 1/8	3 1/16	3 1/4	3 7/16
P—Diameter of Bolt Circle..... "	3 1/4	3 3/4	4 1/2	5	5 7/8	6 5/8	7 1/4	7 7/8	8 1/2	9 1/4	10 5/8	11 3/8	13	14	15 1/4	17 3/8	20	21	22 1/2	24 1/2	26 3/4	28 3/4	31 1/4
Number of Bolts.....	4	4	4	4	4	8	8	8	8	8	12	12	12	12	16	16	20	20	20	24	24	28	28
Size of Bolts .....ins.	1/2	1/2	5/8	5/8	3/4	5/8	5/8	3/4	3/4	3/4	3/4	3/4	7/8	7/8	7/8	1	1	1	1	1 1/8	1 1/8	1 1/8	1 1/8
Length of Bolts..... "	2	2 1/4	2 1/2	2 1/2	3	3	3 1/4	3 1/2	3 1/2	3 3/4	3 3/4	4	4 1/4	4 1/2	4 3/4	5	5 1/8	5 1/2	5 3/4	6	6 1/2	6 3/4	7
Diameter of Bolt Holes..... "	5/8	5/8	3/4	3/4	7/8	3/4	7/8	7/8	7/8	7/8	1	1	1	1	1	1	1 1/8	1 1/8	1 1/8	1 1/8	1 1/4	1 1/4	1 1/4
I—Inside Diameter of Tongue. "	1 3/8	2 1/8	2 3/4	3 1/8	3 5/8	4 1/4	4 3/4	5 1/4	5 3/4	6 1/4	7 1/2	8 5/8	9 5/8	10 5/8	11 5/8	13 3/8	15 7/8	17 1/8	18 3/8	20 1/8	22 1/8	24 1/2	26 1/2
O—Outside Diameter of Tongue "	2 1/2	3	3 5/8	4 1/8	4 5/8	5 1/4	5 3/4	6 1/4	6 3/4	7 1/4	8 1/2	9 5/8	10 7/8	11 7/8	13 1/8	15 1/8	17 3/8	18 5/8	20 1/8	22 1/8	24 1/8	26 1/2	28 1/2
E—Height of Projections { Reg.	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
E—Height of Projections { Spl..	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16
K—Inside Diameter of Groove. "	1 11/16	2 1/16	2 11/16	3 1/16	3 9/16	4 1/16	4 11/16	5 1/16	5 11/16	6 1/16	7 1/16	8 1/16	9 1/16	10 1/16	11 1/16	13 1/16	15 11/16	17 1/16	18 1/16	20 1/16	22 1/16	24 1/16	26 1/16
H—Outside Diameter of Groove "	2 1/16	3 1/16	3 11/16	4 1/16	4 11/16	5 1/16	5 11/16	6 1/16	6 11/16	7 1/16	8 1/16	9 1/16	10 1/16	11 1/16	13 1/16	15 1/16	17 1/16	18 1/16	20 1/16	22 1/16	24 1/16	26 1/16	28 1/16
F—Depth of Recess { Regular..	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8
F—Depth of Recess { Special ..	7/32	7/32	7/32	7/32	7/32	7/32	7/32	7/32	7/32	7/32	7/32	7/32	7/32	7/32	7/32	7/32	7/32	7/32	7/32	7/32	7/32	7/32	7/32
T—Diam. of Projections { Reg..	2 1/16	2 3/8	3 1/8	3 5/8	4 1/8	5	5 1/16	6	6 1/16	7 1/16	8 3/16	9 3/16	10 3/16	11 3/16	12 3/8	15 1/16	16 1/16	17 1/16	18 1/16	21	23	25 1/16	27 1/16
T—Diam. of Projections { Spl....	....	....	....	3 1/16	4 1/16	5 1/16	6 1/16	6 15/16	7 1/16	8 1/16	9 1/16	10 3/16	11 7/16	12 7/16	13 1/16	16 1/16	18 1/16	19 1/16	20 1/16	22 1/16	24 1/16	26 1/16	29 1/16
D—Diameter of Recess { Reg..	2 3/16	2 11/16	3 5/16	3 11/16	4 3/16	5 1/16	5 7/16	6 1/16	6 9/16	7 1/16	8 1/16	9 1/16	10 1/16	11 1/16	12 1/16	15 1/16	16 1/16	17 1/16	18 1/16	21 1/16	23 1/16	25 1/16	27 1/16
D—Diameter of Recess { Spl....	....	....	....	3 3/16	4 1/16	5 1/16	6	6 15/16	7 1/16	8 1/16	9 1/16	10 1/16	11 1/16	12 1/16	13 1/16	16 1/16	18 1/16	19 1/16	20 1/16	22 1/16	25	27	29 1/16
R—Diameter of Calking Recess "	....	....	....	2 7/16	3 5/16	4	4 1/16	5	5 1/16	6 1/16	7 1/16	8 1/16	9 1/16	10 1/16	11 1/16	13 1/16	14 1/16	15 1/16	16 1/16	18 1/16	20 1/16	22 1/16	24 1/16
S—Depth of Calking Recess... "	....	....	....	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16
Width of Calking Recess { at Top..... "	....	....	....	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
Width of Calking Recess { at Bottom.	....	....	....	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8
L—Diameter of Raised Face... "	2 3/8	3 1/8	3 3/8	4 1/4	5	5 7/8	6 1/2	7	7 5/8	8 1/2	9 5/8	10 5/8	12	13	14 1/8	16 3/8	19	19 1/2	22 3/8	23 1/2	25 1/2	27 1/2	30
V—Height of Raised Face..... "	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16
M—Height of Flange, without Male Tongue "	....	....	....	1 3/16	1 1/16	1 1/16	1 3/16	1 3/16	1 1/16	1 3/16	2	2 1/16	2 1/16	2 1/16	2 3/16	2 1/16	2 1/16	2 1/16	2 1/16	2 3/16	3 1/16	3 1/4	3 1/16
N—Height of Flange, from Female Recess.. "	....	....	....	1 3/16	1 1/16	1 1/16	1 3/16	1 3/16	1 1/16	1 3/16	2	2 1/16	2 1/16	2 1/16	2 3/16	2 1/16	2 1/16	2 1/16	2 1/16	2 3/16	3 1/16	3 1/4	3 1/16

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ILLUSTRATING METHODS OF FACING

EXTRA HEAVY COMPANION FLANGES

Fig. H-685
Raised Face

Fig. H-686
Male Face

Fig. H-687
Female Face

Fig. H-688
Spot Faced Bolt Holes

Fig. H-689
Tongued Face

Fig. H-690
Grooved Face

Fig. H-691
Calking Recess

Fig. H-692
Companion Flanges Bolted Together

Unless otherwise specified we will always furnish extra heavy companion flanges, flanged fittings and valves with plain-faced flanges.

No gaskets furnished unless specified. See pages 230 and 231 for extra charges on gaskets.

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FOR SPECIAL FACING OF EXTRA HEAVY COMPANION FLANGES

Size Inches	Extra for Male or Female Face per Flange	Extra for Tongued or Grooved Face per Flange	Extra for ¼ Inch Raised Face per Flange	Extra for Calking Recess per Flange	Extra for Spot Facing Bolt Holes per Flange	Extra for Bolting on Fittings, not including Bolts or Gaskets per Flange	Extra for Wooden Protectors Bolted on with 2 Small Bolts, including the 2 Bolts per Flange
1 x 4½	.50	.50	.50	.50	.20	.10	.20
1¼ x 5	.50	.50	.50	.50	.20	.10	.20
1½ x 6	.50	.50	.50	.50	.20	.10	.20
2 x 6½	.50	.50	.50	.50	.20	.10	.20
2½ x 7½	.65	.65	.65	.65	.20	.10	.20
3 x 8¼	.65	.65	.65	.65	.40	.15	.25
3½ x 9	.65	.65	.65	.65	.40	.15	.25
4 x10	.65	.65	.65	.65	.40	.15	.25
4½ x10½	.65	.65	.65	.65	.40	.15	.25
5 x11	.65	.65	.65	.65	.40	.15	.25
6 x12½	.80	.80	.80	.80	.60	.20	.25
7 x14	.80	.80	.80	.80	.60	.20	.30
8 x15	1.00	1.00	1.00	1.00	.60	.20	.30
9 x16	1.00	1.00	1.00	1.00	.60	.20	.30
10 x17½	1.00	1.00	1.00	1.00	.80	.20	.35
12 x20	1.25	1.25	1.25	1.25	.80	.25	.35
14 x22½	1.60	1.60	1.60	1.60	1.00	.25	.40
15 x23½	1.60	1.60	1.60	1.60	1.00	.25	.40
16 x25	2.00	2.00	2.00	2.00	1.00	.25	.45
18 x27	2.50	2.50	2.50	2.50	1.20	.25	.45
20 x29½	3.00	3.00	3.00	3.00	1.20	.25	.50
22 x31½	4 00	4.00	4.00	4.00	1.40	.25	.50
24 x34	5.00	5.00	5.00	5.00	1.40	.25	.50

For dimensions and templates for drilling see pages 224, 225.

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CAST IRON FITTINGS

EXTRA NET PRICES FOR SPECIAL FACING, ETC.

EXTRA HEAVY FITTINGS—FLANGED

Fig. H-693
Elbow with Female Flanges

Fig. H-694
Elbow with Grooved Flanges

Fig. H-695
Tee with Male Flanges

Fig. H-696
Tee with Tongued Flanges

Fig. H-697
Companion Flanges Bolted on

Fig. H-698
Bolt Holes Spot Faced

Fig. H-699
Wooden Flange Protector Bolted on

Size Inches	Male or Female, Tongued or Grooved or Raised Face for Grinding			Bolting on Companion Flanges not Including Bolts or Gaskets			Furnishing and Bolting on Wooden Protectors, Including 2 Bolts		
	Extra for Fitting or Valve with Two Flanges	Extra for Fitting or Valve with Three Flanges	Extra for Fitting with Four Flanges	Extra for Fitting or Valve with Two Flanges	Extra for Fitting or Valve with Three Flanges	Extra for Fitting with Four Flanges	Extra for Fitting or Valve with Two Flanges	Extra for Fitting or Valve with Three Flanges	Extra for Fitting with Four Flanges
1¼ & 1½	1.00	1.25	1.75	.20	.30	.40	.40	.60	.80
2	1.00	1.75	2.25	.20	.30	.40	.40	.60	.80
2½	1.25	1.75	2.25	.20	.30	.40	.40	.60	.80
3 to 5	1.25	1.75	2.25	.30	.45	.60	.50	.75	1.00
6	1.50	2.00	2.50	.40	.60	.80	.50	.75	1.00
7	1.50	2.00	2.50	.40	.60	.80	.60	.90	1.20
8 & 9	2.00	2.50	3.00	.40	.60	.80	.60	.90	1.20
10	2.00	2.50	3.00	.40	.60	.80	.70	1.05	1.40
12	2.50	3.00	3.50	.50	.75	1.00	.70	1.05	1.40
14 & 15	3.25	4.00	5.00	.50	.75	1.00	.80	1.20	1.60
16	4.00	5.00	6.00	.50	.75	1.00	.90	1.35	1.80
18	5.00	6.25	7.50	.50	.75	1.00	.90	1.35	1.80
20	6.00	7.50	9.00	.50	.75	1.00	1.00	1.50	2.00
22	8.00	10.00	10.00	.50	.75	1.00	1.00	1.50	2.00
24	10.00	12.50	12.50	.50	.75	1.00	1.00	1.50	2.00

Spot Facing Bolt Holes 5 Cents Net Extra for Each Hole.

The above net prices apply to both straight and reducing sizes.
To avoid mistakes in facing flanges, furnish drawing.
Gaskets will only be furnished when specified and at an extra price.
Dimensions of raised face male, female, tongued and grooved flanges, pages 224, 225.
Unless otherwise specified, male and female and tongued and grooved valves and fittings will be furnished as follows: Valves, both ends male; Tees, male and female on run, female on outlet; Elbows, male and female.

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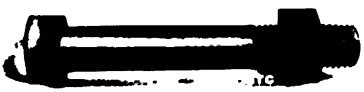
MANUFACTURERS' STANDARD LIST OF

MACHINE BOLTS

With Square Heads and Square Nuts

Fig. H-700
Finished Points



Length in Inches	¼	5/16	⅜	7/16	½	9/16 and 5/8	¾	⅞	1	1⅛	1¼
1½	1.70	2.00	2.40	2.80	3.60	5.20	7.20	10.50	15.10	22.50	30.00
2	1.78	2.12	2.56	3.00	3.86	5.58	7.70	11.20	16.00	23.70	31.50
2½	1.86	2.24	2.72	3.20	4.12	5.96	8.20	11.90	16.90	24.90	33.00
3	1.94	2.36	2.88	3.40	4.38	6.34	8.70	12.60	17.80	26.10	34.50
3½	2.02	2.48	3.04	3.60	4.64	6.72	9.20	13.30	18.70	27.30	36.00
4	2.10	2.60	3.20	3.80	4.90	7.10	9.70	14.00	19.60	28.50	37.50
4½	2.18	2.72	3.36	4.00	5.16	7.48	10.20	14.70	20.50	29.70	39.00
5	2.26	2.84	3.52	4.20	5.42	7.86	10.70	15.40	21.40	30.90	40.50
5½	2.34	2.96	3.68	4.40	5.68	8.24	11.20	16.10	22.30	32.10	42.00
6	2.42	3.08	3.84	4.60	5.94	8.62	11.70	16.80	23.20	33.30	43.50
6½	2.50	3.20	4.00	4.80	6.20	9.00	12.20	17.50	24.10	34.50	45.00
7	2.58	3.32	4.16	5.00	6.46	9.38	12.70	18.20	25.00	35.70	46.50
7½	2.66	3.44	4.32	5.20	6.72	9.76	13.20	18.90	25.90	36.90	48.00
8	2.74	3.56	4.48	5.40	6.98	10.14	13.70	19.60	26.80	38.10	49.50
9	2.90	3.80	4.80	5.80	7.50	10.90	14.70	21.00	28.60	40.50	52.50
10	3.06	4.04	5.12	6.20	8.02	11.66	15.70	22.40	30.40	42.90	55.50
11	3.22	4.28	5.44	6.60	8.54	12.42	16.70	23.80	32.20	45.30	58.50
12	3.38	4.52	5.76	7.00	9.06	13.18	17.70	25.20	34.00	47.70	61.50
13	....	....	6.08	7.40	9.58	13.94	18.70	26.60	35.80	50.10	64.50
14	....	....	6.40	7.80	10.10	14.70	19.70	28.00	37.60	52.50	67.50
15	....	....	6.72	8.20	10.62	15.46	20.70	29.40	39.40	54.90	70.50
16	....	....	7.04	8.60	11.14	16.22	21.70	30.80	41.20	57.30	73.50
17	....	....	7.36	9.00	11.66	16.98	22.70	32.20	43.00	59.70	76.50
18	....	....	7.68	9.40	12.18	17.74	23.70	33.60	44.80	62.10	79.50
19	....	....	8.00	9.80	12.70	18.50	24.70	35.00	46.60	64.50	82.50
20	....	....	8.32	10.20	13.22	19.26	25.70	36.40	48.40	66.90	85.50

The following extras are to be understood as a part of the machine bolt list:

Bolts with hexagon heads or hexagon nuts 10% extra.

If both hexagon heads and hexagon nuts 20% extra.

Joint bolts with oblong nuts and bolts with tee heads 10% extra.

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GASKETS

For Medium and Extra Heavy Flanged Valves and Fittings

NET PRICES AND DIMENSIONS

	Ring Gaskets				Full Face Gaskets			
Size of Valve or Fitting Inches	1/16 Inch Rainbow Gaskets Each	Corrugated Copper Gaskets Each	1/8 Inch Asbestos Gaskets Each	Inside and Outside Diameter Inches	1/16 Inch Rainbow Gaskets Each	Corrugated Copper Gaskets Each	1/8 Inch Asbestos Gaskets Each	Inside and Outside Diameter Inches
1	.08	.04	.10	1 x 2 3/4	.18	.09	.20	1 x 4 1/2
1 1/4	.08	.04	.12	1 1/4 x 3 1/4	.18	.09	.24	1 1/4 x 5
1 1/2	.08	.04	.15	1 1/2 x 3 7/8	.18	.09	.30	1 1/2 x 6
2	.09	.05	.18	2 x 4 3/8	.21	.12	.36	2 x 6 1/2
2 1/2	.12	.06	.22	2 1/2 x 5	.25	.15	.40	2 1/2 x 7 1/2
3	.15	.08	.25	3 x 6	.32	.18	.50	3 x 8 1/4
3 1/2	.16	.09	.30	3 1/2 x 6 5/8	.35	.21	.60	3 1/2 x 9
4	.18	.10	.35	4 x 7	.45	.25	.70	4 x10
4 1/2	.21	.12	.40	4 1/2 x 7 3/4	.47	.27	.80	4 1/2 x10 1/2
5	.25	.15	.45	5 x 8 1/2	.50	.30	.90	5 x11
6	.30	.18	.50	6 x 9 7/8	.60	.36	1.00	6 x12 1/2
7	.40	.21	.55	7 x11	.75	.45	1.10	7 x14
8	.42	.24	.60	8 x12	.80	.50	1.20	8 x15
9	.48	.27	.65	9 x13 1/8	.95	.55	1.30	9 x16
10	.55	.33	.75	10 x14 1/4	1.05	.65	1.50	10 x17 1/2
12	.70	.42	.90	12 x16 7/8	1.40	.80	1.80	12 x20
14	1.00	.55	1.00	13 1/4 x19 1/8	1.70	1.00	2.20	13 1/4 x22 1/2
15	1.05	.60	1.10	14 1/4 x20	1.90	1.10	2.30	14 1/4 x23 1/2
16	1.20	.66	1.25	15 1/4 x21 1/2	2.00	1.20	2.60	15 1/4 x25
18	1.35	.75	1.35	17 1/4 x23 1/2	2.20	1.30	2.90	17 1/4 x27
20	1.45	.85	1.50	19 1/4 x25 5/8	2.50	1.50	3.25	19 1/4 x29 1/2
22	1.55	.90	1.75	21 1/4 x27 5/8	2.80	1.60	3.60	21 1/4 x31 1/2
24	1.90	1.05	2.00	23 1/4 x30 1/8	3.15	1.90	4.50	23 1/4 x34

Ring gaskets cover the faces of flanges inside of bolt holes, and will always be furnished unless otherwise ordered.

Corrugated copper gaskets are made from 27 B. W. G. copper. We can, however, furnish these gaskets made from a heavier gauge of copper, at an extra price, with either plain or corrugated faces, and hard or annealed. Special corrugated sheet iron, or steel gaskets, for cyanide piping, made to order. We can furnish gaskets, at special prices, made from any brand of sheet rubber or metal that is manufactured.

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GASKETS

For Medium and Extra Heavy Flanged Valves and Fittings

NET PRICES AND DIMENSIONS

Size of Valve or Fitting Inches	Gaskets for Male and Female Joints: 1/8-Inch Rainbow Gaskets Each	Corrugated Copper Gaskets Each	1/8-Inch Asbestos Gaskets Each	Inside and Outside Diameters Inches	Gaskets for Tongued and Grooved Joints: 1/8-Inch Rainbow Gaskets Each	Corrugated Copper Gaskets Each	1/8-Inch Asbestos Gaskets, Each	Inside and Outside Diameters Inches
1	.05	.02	.08	1 x 2 5/16	.03	.02	.05	1 3/4 x 2 1/2
1 1/4	.05	.02	.10	1 1/4 x 2 3/4	.03	.02	.05	2 1/8 x 3
1 1/2	.05	.03	.14	1 1/2 x 3 1/8	.03	.03	.05	2 3/4 x 3 5/8
2	.05	.04	.15	2 x 3 5/8	.03	.03	.06	3 1/8 x 4 1/8
2 1/2	.06	.04	.16	2 1/2 x 4 1/8	.04	.04	.06	3 5/8 x 4 5/8
3	.08	.05	.17	3 x 5	.05	.04	.07	4 1/4 x 5 1/4
3 1/2	.10	.06	.18	3 1/2 x 5 1/2	.05	.05	.09	4 3/4 x 5 3/4
4	.11	.07	.19	4 x 6	.06	.05	.09	5 1/4 x 6 1/4
4 1/2	.13	.08	.20	4 1/2 x 6 1/2	.06	.05	.09	5 3/4 x 6 3/4
5	.15	.08	.23	5 x 7 1/4	.06	.06	.10	6 1/4 x 7 1/4
6	.16	.10	.27	6 x 8 3/8	.07	.06	.10	7 1/2 x 8 1/2
7	.20	.12	.30	7 x 9 3/8	.08	.08	.12	8 5/8 x 9 5/8
8	.25	.15	.43	8 x10 5/8	.11	.09	.15	9 5/8 x10 7/8
9	.27	.18	.50	9 x11 5/8	.12	.10	.18	10 5/8 x11 7/8
10	.32	.21	.55	10 x12 3/4	.15	.14	.22	11 5/8 x13 1/8
12	.44	.27	.62	12 x15 1/4	.18	.15	.26	13 5/8 x15 1/8
14	.48	.30	.72	13 1/4 x16 1/2	.20	.18	.30	15 7/8 x17 3/8
15	.50	.33	.80	14 1/4 x17 1/2	.22	.20	.35	17 1/8 x18 5/8
16	.58	.36	1.00	15 1/4 x18 1/2	.28	.23	.40	18 3/8 x20 1/8
18	.70	.45	1.10	17 1/4 x21	.35	.30	.45	20 3/8 x22 3/8
20	.80	.50	1.35	19 1/4 x23	.40	.36	.50	22 3/8 x24 5/8
22	1.00	.60	1.50	21 1/4 x25 1/2	.45	.40	.55	24 1/2 x26 1/2
24	1.15	.70	1.65	23 1/4 x27 1/2	.50	.42	.60	26 1/2 x28 1/2

Ring gaskets cover the faces of flanges inside of bolt holes, and will always be furnished unless otherwise ordered.

Corrugated copper gaskets are made from 27 B. W. G. copper. We can, however, furnish these gaskets made from a heavier gauge of copper, at an extra price, with either plain or corrugated faces, and hard or annealed. Special corrugated sheet iron, or steel gaskets, for cyanide piping made to order. We can furnish gaskets, at special prices, made from any brand of sheet rubber or metal that is manufactured.

EXTRA HEAVY STRAIGHT FITTINGS—FLANGED

Suitable for Steam Working Pressures up to 250 Pounds

Fig. H-701

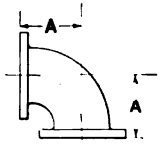


Fig. H-702

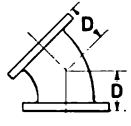


Fig. H-703

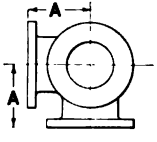


Fig. H-704

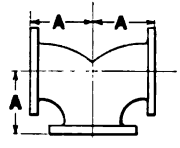


Fig. H-705

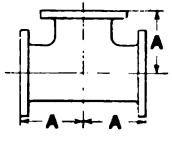


Fig. H-706

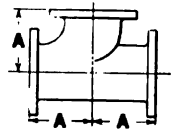


Fig. H-707

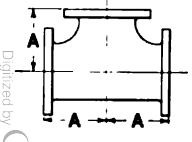


Fig. H-708

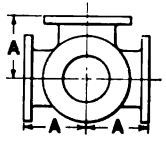


Fig. H-709

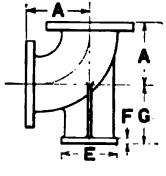


Fig. H-710

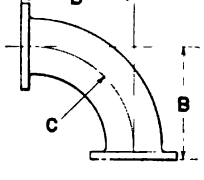
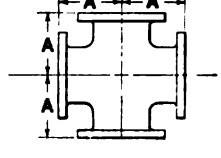


Fig. H-711



The Manufacturers' standard flanges and drilling are used on all extra heavy flanged fittings and valves; bolt holes are in multiples of four and straddle center line. Two set of dimensions are shown on opposite page for long sweep elbows. Those marked regular will be furnished unless otherwise specified. The lengths center to face, and face to face of male and female, tongued or grooved extra heavy flanged fittings, as given in tables, are from face of flange and not from tongue or recess. When the flanges are RAISED FACE, however, the dimensions are from face of raised face.

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EXTRA HEAVY STRAIGHT FITTINGS—FLANGED

Suitable for Steam Working Pressures up to 250 Pounds

DIMENSIONS, TABLE No. 10

Size ..... inches	1¼	1½	2	2½	3	3½	4	4½	5	6	7	8	9	10	12	14	15	16	18	20	22	24
A-A—Face to Face ..... inches	8½	9	10	11	12	13	14	15	16	17	18	20	21	23	26	29	30	32	34	37	40	44
A—Center to Face ..... "	4¼	4½	5	5½	6	6½	7	7½	8	8½	9	10	10½	11½	13	14½	15	16	17	18½	20	22
B—Center to Face of Long Sweep Ells—Regular .. "	....	....	6½	7	7¾	8½	9	9½	10¾	11½	12¾	14	15¾	16½	19	21½	22¾	24	26½	29	31½	34
C—Radius of Long Sweep Ells—Regular ..... "	....	....	5¾	5⅝	6¼	6⅞	7⅝	7¾	8½	9⅝	10⅜	12	13	14⅜	16½	18⅞	20	21⅜	23⅝	26	28⅜	30¾
B—Center to Face of Long Sweep Ells—Special... "	....	8	9	10	11	12	13	14	15	16	17	18	20	22	24	28	29	30	33	....	....	....
C—Radius of Long Sweep Ells—Special ..... "	....	6¾	7½	8½	9	10	11	12	12⅜	13½	14½	15½	17⅛	19	20¾	24½	25½	26⅜	29¼	....	....	....
D—Center to Face of 45° Ells..... "	2½	2⅝	3	3½	3½	4	4½	4½	5	5½	6	6	6½	7	8	8	8½	9	9½	10	10½	11½
E—Distance Across Round or Square Base Flange "	4½	4¾	5	5	6	6	6½	6½	7½	7½	7½	10	10	10	12½	12½	12½	12½	15	15	17½	17½
F—Thickness of Round or Square Base Flange ... "	⅞	1	⅞	⅞	1	1	⅞	⅞	1	1	1	1¼	1¼	1½	1⅝	1⅞	1⅞	1⅞	1⅞	1⅝	1⅝	1¾
G—Center to Face of Base on Base Ells..... "	4½	5	5½	6	6¼	6¾	7	7¼	7½	8	8¾	9¼	10	10½	11	14	14½	15¼	15½	16¾	17¾	18¾

TABLE No. 11. DIMENSIONS OF THE FLANGES OF EXTRA HEAVY FLANGED FITTINGS MANUFACTURERS' STANDARD

Size ..... inches	1¼	1½	2	2½	3	3½	4	4½	5	6	7	8	9	10	12	14	15	16	18	20	22	24
Diameter of Flanges ..... inches	5	6	6½	7½	8½	9	10	10½	11	12½	14	15	16	17½	20	22½	23½	25	27	29½	31½	34
Thickness of Flanges ..... "	¾	⅞	⅞	1	1⅛	1⅛	1⅛	1⅛	1⅛	1⅛	1⅛	1⅛	1⅛	1⅛	2	2⅛	2⅛	2⅛	2⅛	2⅛	2⅛	2⅜
Number of Bolts ..... "	4	4	4	4	8	8	8	8	8	12	12	12	12	16	16	20	20	20	24	24	28	28
Size of Bolts ..... "	½	⅝	⅝	¾	⅝	⅝	¾	¾	¾	¾	⅞	⅞	⅞	⅞	⅞	⅞	1	1	1	1⅛	1⅛	1⅛
Length of Bolts ..... "	2½	2⅝	2½	3	3	3½	3½	3½	4	4	4	4½	4½	5	5	5½	5½	6	6	6½	6½	7
Size of Bolt Holes ..... "	⅞	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1⅛	1⅛	1⅛	1⅛	1⅛	1¼
Diameter of Bolt Circle ..... "	3¾	4½	5	5⅞	6¾	7¼	7⅞	8½	9½	10⅝	11⅞	13	14	15¼	17¾	20	21	22½	24½	26¾	28¾	31¼

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CAST IRON FITTINGS

EXTRA HEAVY REDUCING FITTINGS FLANGED

Suitable for Steam Working Pressures up to 250 Pounds

Fig. H-712

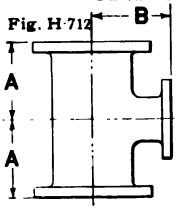


Fig. H-713

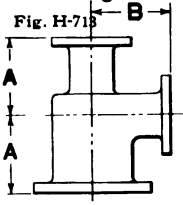


Fig. H-714

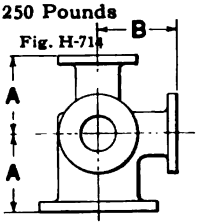


Fig. H-715

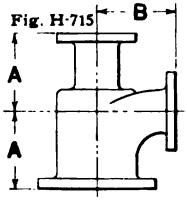


Fig. H-716

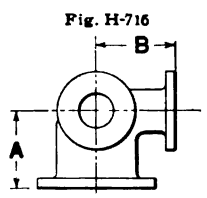
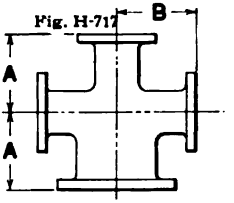


Fig. H-717



DIMENSIONS, TABLE No. 12

Dimensions of reducing fittings 1¼ to 9 inch, inclusive, with outlets smaller than large end of runs. These dimensions do not cover bull heads (or tees increasing on the outlets). See foot note and example.

Size.....inches	1¼	1½	2	2½	3	3½	4	4½	5	6	7	8	9
AA Face to Face of Run.....inches	8½	9	10	11	12	13	14	15	16	17	18	20	21
A —Center to Face of Run .. "	4¼	4½	5	5½	6	6½	7	7½	8	8½	9	10	10½
B—Center to Face of Outlet... "	4¼	4½	5	5½	6	6½	7	7½	8	8½	9	10	10½

DIMENSIONS, TABLE No. 13

Dimensions of reducing fittings 10 to 24 inch inclusive, with large outlets. These dimensions do not cover bull heads (or tees increasing on outlets). See foot note and example.

Size.....inches	10	12	14	15	16	18	20	22	24
Size of Outlets.....inches	7 and Larger	9 and Larger	10 and Larger	10 and Larger	12 and Larger	14 and Larger	15 and Larger	15 and Larger	15 and Larger
AA—F. to F. of Run. "	23	26	29	30	32	34	37	40	44
A —C. to F. of Run.. "	11½	13	14½	15	16	17	18½	20	22
B—C. to F. of Outlet. "	11½	13	14½	15	16	17	18½	20	22

DIMENSIONS, TABLE No. 14

Dimensions of reducing fittings 10 to 24 inch inclusive, with smaller outlets than shown in above table. These dimensions do not cover bull heads (or tees increasing on outlets). See foot note and example.

Size.....inches	10	12	14	15	16	18	20	22	24
Size of Outlets ... inches	6 and Smaller	8 and Smaller	9 and Smaller	9 and Smaller	10 and Smaller	12 and Smaller	14 and Smaller	14 and Smaller	14 and Smaller
AA- F. to F. of Run. "	18	21	22	23	24	27	30	30	30
A- C. to F. of Run.. "	9	10½	11	11½	12	13½	15	15	15
B- C. to F. of Outlet. "	11	12½	13½	13½	15	16½	17½	18½	19½

For dimension of flanges of extra heavy flanged fittings, see table No. 11, page 233.

BULL HEADS OR TEES, INCREASING ON THE OUTLETS

Tees with outlets larger than the run have the same length center to face of all openings as a tee with all openings the size of the outlets.

Example: A 12x12x18 inch tee is 17 inches center to face of all openings, the same as an 18 inch tee.

Reductions on the run do not affect face to face dimensions, except in the case of double sweep tees.

Dimensions of double sweep tees reducing on run, furnished upon application.

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CAST IRON FITTINGS

EXTRA HEAVY REDUCING ELBOWS FLANGED

Suitable for Steam Working Pressures up to 250 Pounds

Fig. H-718
Taper

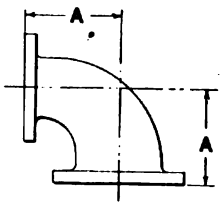
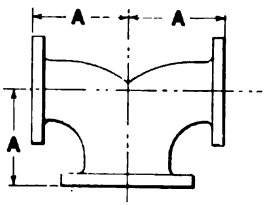


Fig. H-719
Double Branch



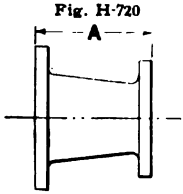
DIMENSIONS, TABLE No. 15

Size .....inches	2	2½	3	3½	4	4½	5	6	7	8
AA–Face to Face.... in.	10	11	12	13	14	15	16	17	18	20
A–Center to Face.... "	5	5½	6	6½	7	7½	8	8½	9	10
Size .....inches	9	10	12	14	15	16	18	20	22	24
AA–Face to Face....in.	21	23	26	29	30	32	34	37	40	44
A–Center to Face.... "	10½	11½	13	14½	15	16	17	18½	20	22

EXTRA HEAVY REDUCERS—FLANGED

Suitable for Steam Working Pressures up to 250 Pounds

Fig. H-720

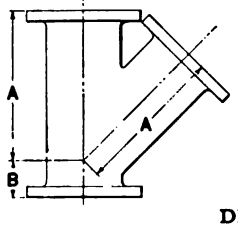


DIMENSIONS, TABLE No. 16

Size, inches	3 in. Reducers, 2½ in. and smaller Reductions	3½ in. Reducers, 3 in. and smaller Reductions	4 in. Reducers, 3½ in. and smaller Reductions	5 in. Reducers, 4½ in. and smaller Reductions	6 in. Reducers, 5 in. and smaller Reductions	7 in. Reducers, 6 in. and smaller Reductions	8 in. Reducers, 7 in. and smaller Reductions	10 in. Reducers, 9 in. and smaller Reductions
A-Face to Face in.	6	6½	7	8	9	10	11	12
Size, inches	**12 in. Reducers, 10 in. and smaller Reductions**	**14 in. Reducers, 12 in. and smaller Reductions**	**15 in. Reducers, 14 in. and smaller Reductions**	**16 in. Reducers, 15 in. and smaller Reductions**	**18 in. Reducers, 16 in. and smaller Reductions**	**20 in. Reducers, 18 in. and smaller Reductions**	**22 in. Reducers, 20 in. and smaller Reductions**	**24 in. Reducers, 22 in. and smaller Reductions**
A-Face to Face in.	14	16	17	18	19	20	22	24

For dimensions of flanges of extra heavy flanged fittings see table No. 11, page 233.

Fig. H-721



CAST IRON FITTINGS

EXTRA HEAVY STRAIGHT LATERALS—FLANGED

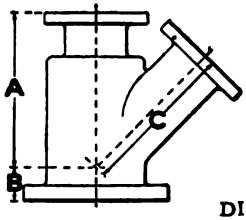
Suitable for Steam Working Pressures up to 250 Pounds

DIMENSIONS TABLE No. 17

Size..... inches	2	2½	3	3½	4	4½	5	6	7	8
A+B–Face to Face of Run..ins.	11½	13	14	15½	16½	18	18½	21½	23	25
A–Center to Face.... "	9	10½	11	12½	13½	14½	15	17½	18½	20
B–Center to Face.... "	2½	2½	3	3	3	3½	3½	4	4½	5

Size.....inches	9	10	12	14	15	16	18	20	22	24
A+B–Face to Face of Run..ins.	26	28½	32½	36½	38	40½	44	46½	51	54½
A–Center to Face.... "	21	23	26½	30	31½	33	36	38	41½	44½
B–Center to Face.... "	5	5½	6	6½	6½	7½	8	8½	9½	10

Fig. H-722



EXTRA HEAVY REDUCING LATERALS—FLANGED

Suitable for Steam Working Pressures up to 250 Pounds

DIMENSIONS TABLE No. 18

Size.....inches	4	4½	5	6	7	8	9	10
Size of Branch.... ins.	2½ and smaller	2½ and smaller	3 and smaller	3 and smaller	3½ and smaller	4 and smaller	4½ and smaller	5 and smaller
Face to Face of Run..... "	14	15	16	17	18	20	21	23
A–Center to Face. "	12	12½	13½	14½	15½	17½	18½	20½
B–Center to Face. "	2	2½	2½	2½	2½	2½	2½	2½
C–Center to Face. "	13	13½	14½	15½	16½	18½	19½	21½

Size..... inches	12	14	15	16	18	20	22	24
Size of Branch.... ins.	6 and smaller	7 and smaller	7 and smaller	8 and smaller	9 and smaller	10 and smaller	10 and smaller	12 and smaller
Face to Face of Run..... "	26	29	30	32	34	37	40	44
A–Center to Face. "	23½	26½	27½	29	31	34	37	41
B–Center to Face. "	2½	2½	2½	3	3	3	3	3
C–Center to Face. "	24½	27½	28½	30½	32½	36	39	43

For dimensions of flanges of extra heavy flange fittings, see table No. 11, page 233.
Laterals reducing on run only, have same face to face dimensions as straight sizes.
When the branch is larger than those shown in table No. 18, use table No. 17.
We are also prepared to furnish, at a special price, reducing flanged laterals in all sizes to dimensions shown in table No. 17, when so specified

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CAST IRON FITTINGS—DRAINAGE

Our line of drainage fittings has been carefully designed and all pockets where solid matter might lodge have been studiously avoided.

GALVANIZED

Drainage fittings may be obtained either black or galvanized.

MALLEABLE IRON

In case extra strong drainage fittings are desired we are prepared to furnish malleable iron castings from our cast iron patterns.

THREADS

All drainage fittings are tapped with regular threads for wrought pipe.

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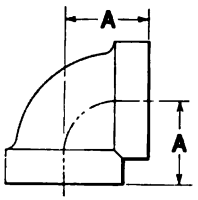
CAST IRON FITTINGS—DRAINAGE

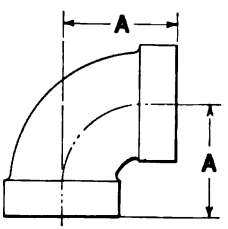
Fig. H-750



90° SHORT TURN ELBOWS

Size...inches	1¼	1½	2	2½	3	4	5	6	7	8	10
Dimensions A..ins.	1¾	2 3/16	2 3/8	2 13/16	3 3/16	3 13/16	4½	5 3/16	5 13/16	6½	7¾
Each.....	.45	.50	.60	.90	1.10	1.70	2.60	3.50	6.00	7.00	9.00
Each, Galv..	.90	1.00	1.20	1.80	2.20	3.40	5.20	7.00	12.00	14.00	18.00

Fig. H-751



90° LONG TURN ELBOWS

Size...inches	1¼	1½	2	2½	3	4	5	6	7	8	10
Dimensions A..ins.	2¼	2½	3 1/16	3 11/16	4¼	5 5/16	6⅛	7⅛	8⅛	9	11
Each.....	.50	.60	.70	1.10	1.30	2.00	3.60	5.20	8.50	10.00	12.00
Each, Galv..	1.00	1.20	1.40	2.20	2.60	4.00	7.20	10.40	17.00	20.00	24.00

90° short and long turn elbows are tapped, pitched ¼ inch to the foot.

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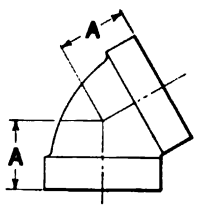
CAST IRON FITTINGS—DRAINAGE

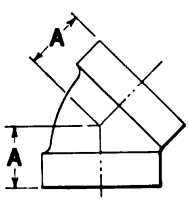
Fig. H-752



60° ELBOWS

Size..... inches	1½	2	2½	3	4	5	6	7	8	10
Dimensions A. ins.	1¾	2	2½	2⅞	3⅜	3⅞	4 5/16	4½	5⅜	6¼
Each.....	.50	.60	.90	1.10	1.70	2.60	3.50	6.00	7.00	9.00
Each, Galv.....	1.00	1.20	1.80	2.20	3.40	5.20	7.00	12.00	14.00	18.00

Fig. H-753



45° ELBOWS

Size...inches	1¼	1½	2	2½	3	4	5	6	7	8	10
Dimensions A..ins.	1⅜	1 7/16	1¾	2 1/16	2⅜	2¾	3 5/16	3½	3⅞	4 5/16	4⅞
Each.....	.45	.50	.60	.90	1.10	1.70	2.60	3.50	6.00	7.00	9.00
Each, Galv..	.90	1.00	1.20	1.80	2.20	3.40	5.20	7.00	12.00	14.00	18.00

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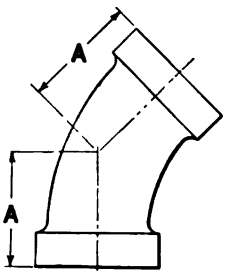
CAST-IRON FITTINGS—DRAINAGE

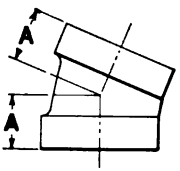
Fig. H-754



45° LONG TURN ELBOWS

Size.....inches	1¼	1½	2	3	4	5	6	7	8	10
Dimensions A. ...inches	1⅜	1⅞	2¼	2⅞	3 7/16	4⅛	4⅞	5½	6	7½
Each	.60	.70	.80	1.45	2.25	4.00	5.75	9.50	11.00	13.50
Each, Galvanized.....	1.20	1.40	1.60	2.90	4.50	8.00	11.50	19.00	22.00	27.00

Fig. H-755



22½° ELBOWS

Size .....inches	1½	2	2½	3	4	5	6	7	8	10
Dimensions A.....inches	1¼	1 7/16	1¾	2	2 5/16	2⅝	2 5/16	3¼	3 9/16	3⅞
Each.....	.50	.60	.90	1.10	1.70	2.60	3.50	6.00	7.00	9.00
Each, Galvanized.....	1.00	1.20	1.80	2.20	3.40	5.20	7.00	12.00	14.00	18.00

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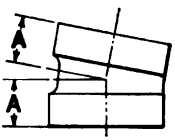
CAST IRON FITTINGS—DRAINAGE

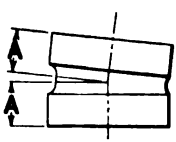
Fig. H-756



11¼° ELBOWS

Size .....inches	1½	2	2½	3	4	5	6	7	8	10
Dimensions A.....inches	1 7/32	1 13/32	1 21/32	1 15/16	2 5/8	2 3/8	2½	2 5/8	2¾	3
Each.....	.50	.60	.90	1.10	1.70	2.60	3.50	6.00	7.00	9.00
Each, Galvanized.....	1.00	1.20	1.80	2.20	3.40	5.20	7.00	12 00	14.00	18.00

Fig. H-757



5⅝° ELBOWS

Size .....inches	1½	2	3	4	5	6	7	8	10
Dimensions A.....inches	1 5/16	1½	1¾	2	2¼	2 5/16	2 3/8	2½	2¾
Each.....	.50	.60	1.10	1.70	2.60	3.50	6.00	7.00	9.00
Each, Galvanized.....	1.00	1.20	2.20	3.40	5.20	7.00	12.00	14.00	18.00

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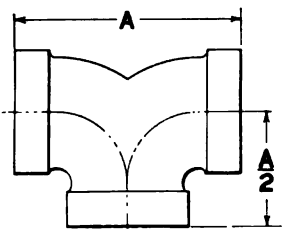
CAST IRON FITTINGS—DRAINAGE

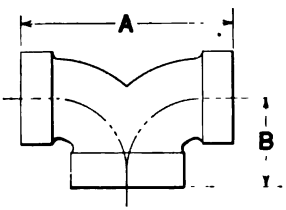
Fig. H-758



THREE WAY ELBOWS

Size.....inches	1½	2	3	4	5	6
Dimensions A.....inches	5¼	6¼	8⅝	10⅜	12¼	14¼
Dimensions A 2..... "	2⅝	3⅛	4 5/16	5 3/16	6⅛	7⅛
Each.....	1.00	1.30	2.20	3.10	4.25	6.50
Each, Galvanized.....	2.00	2.60	4.40	6.20	8.50	13.00

Fig. H-759



REDUCING THREE WAY ELBOWS

Size.....inches	4 x 3	5 x 4	6 x 4	6 x 5
Dimensions A.....inches	9½	11 3/8	12 3/8	13 3/8
Dimensions B..... "	4 5/16	5 5/16	5⅞	6¼
Each.....	3.10	4.25	6.50	6.50
Each, Galvanized.....	6.20	8.50	13.00	13.00

The inlets of three way elbows are tapped, pitched ¾ inch to the foot. The inlets on reducing fittings are always the smallest openings.

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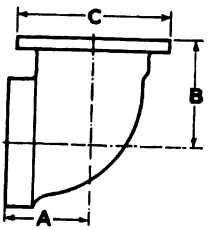
CAST IRON FITTINGS—DRAINAGE

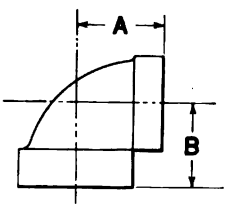
Fig. H-760



CLOSET ELBOWS
Flanged One End

Size ..... inches	4
Dimensions A ..... inches	3 13/16
Dimensions B ..... "	4 5/8
Diameter of Flange C ..... "	7
Each	2.50
Each, Galvanized	5.00

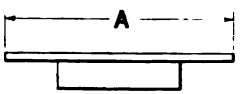
Fig H-761



REDUCING CLOSET ELBOWS

Size ..... inches	4 x 5
Dimensions A ..... inches	4 7/16
Dimensions B ..... "	3 13/16
Each	3.70
Each, Galvanized	7.40

Fig. H-762



CLOSET FLANGES

Size ..... inches	4
Diameter of Flange A ..... inches	7
Each	1.30
Each, Galvanized	2.60

Fig. H-763

BRASS CLOSET FLANGES

Size ..... inches	4
Diameter of Flange A ..... inches	7
Each	3.20

The fittings illustrated above are not carried in stock, but made on receipt of order only. Closet elbows are tapped, pitched ¼ inch to the foot.

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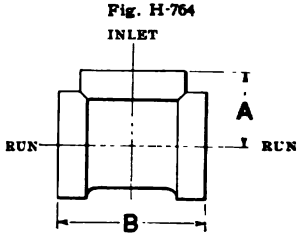
CAST IRON FITTINGS
DRAINAGE

Fig. H-764

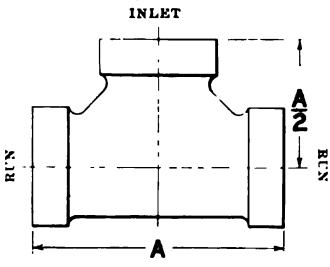


TEES

Size.....inches	1½	2	2x1½	3	3x1½	3x2	4	4x2
Dimensions A..inches	2 3/16	2 5/16	2 1/4	3 5/16	....	3	3 3/32	3 9/16
Dimensions B..inches	4 3/8	4 5/8	4 1/8	6 3/8	....	5 1/2	7 5/16	6
Each	.75	.90	.90	1.40	1.40	1.40	2.30	2.30
Each, Galvanized.....	1.50	1.80	1.80	2.80	2.80	2.80	4.60	4.60

Size.....inches	4x3	5	5x2	5x3	6	7	8	10
Dimensions–A..inches	3¾	4 5/8	4 3/16	4 3/8	5 5/16	5 15/16	6½	7 3/4
Dimensions–B..inches	7	9 1/4	6	6 7/8	10 3/8	11 5/8	13	15 1/2
Each.....	2.30	4.00	4.00	4.00	6.00	9.00	12.00	18.00
Each, Galvanized.....	4.60	8.00	8.00	8.00	12.00	18.00	24.00	36.00

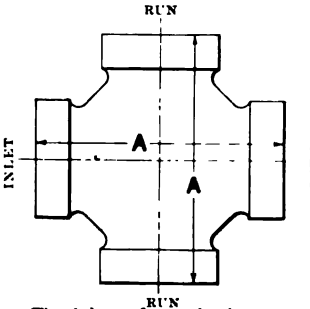
Fig. H 765



BASIN TEES

Size .....inches	1½	2	2x1½
Dimensions A ...inches	5 3/8	7	6½
Dimensions A-2 .inches	2 11/16	3½	3 1/4
Each.....	1.25	1.35	1.35
Each, Galvanized	2.50	2.70	2.70

Fig. H-766



BASIN CROSSES

Size .....inches	2	2x1½
Dimensions A .....inches	7	6½
Dimensions A .....inches	7	6½
Each.....	1.60	1.60
Each, Galvanized	3.20	3.20

The inlets of tees, basin tees and basin crosses are tapped, pitched ¼ inch to the foot. The inlets of reducing fittings are always the smallest openings.

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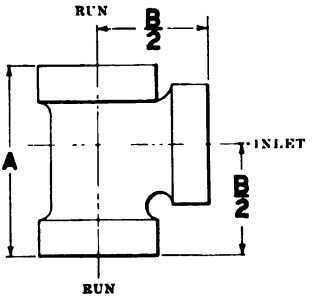
CAST IRON FITTINGS
DRAINAGE

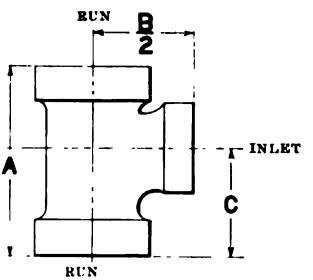
Fig. H-767



90° Y BRANCHES — Tee Pattern

Size ...inches	1	1¼	1½	2	2½	3	4	5	6	7	8	10
Dimensions A..ins.	3¼	3¾	4¼	5⅛	6⅝	7¼	8¾	10⅝	11⅝	13⅝	15⅛	20
" B-2 "	1⅝	2¼	2½	3⅛	3⅛	4¼	5⅛	6⅛	7⅛	8⅛	9	11⅜
Each	.90	1.00	1.15	1.35	1.90	2.25	3.50	5.50	7.00	11.50	14.50	20.00
Each, Galv...	1.80	2.00	2.30	2.70	3.80	4.50	7.00	11.00	14.00	23.00	29.00	40.00

Fig. H-768



REDUCING 90° Y BRANCHES — Tee Pattern

Size..inches	1½x1¼	2x1¼	2½x1¼	2½x1½	2½x2	3x1½	3x2	4x1½	4x2	4x2½	4x3	3x4
Dimen. A ..ins.	3⅞	4⅝	4⅜	4⅞	5½	5⅛	5⅛	5¼	5⅜	6⅝	7⅜	8⅝
" B-2. "	2½	2⅝	2⅝	3⅛	3⅝	3⅝	3⅝	3⅜	4⅛	4⅞	4¾	5⅝
" C.. "	2⅜	2⅛	2½	2⅜	3¼	2⅝	3⅝	3	3⅜	3⅜	4⅝	5⅛
Each.....	1.15	1.35	1.90	1.90	1.90	2.25	2.25	3.50	3.50	3.50	3.50	3.50
Each, Galv..	2.30	2.70	3.80	3.80	3.80	4.50	4.50	7.00	7.00	7.00	7.00	7.00

Size..inches	5x1½	5x2	5x2½	5x3	5x4	6x2	6x3	6x4	6x5	8x3	8x4	8x6
Dimen. A ...ins.	5⅝	6⅛	6⅝	7¾	9⅛	6¼	7⅞	9¼	10⅜	11⅞	11⅞	15⅛
" B-2. "	4⅜	4⅝	4⅞	5¼	5⅛	5⅛	5¾	6⅜	6⅝	7¼	7⅜	8½
" C.. "	3⅜	3⅜	4	4½	5⅜	3⅝	4⅜	5⅞	6¼	7⅝	7½	10
Each.....	5.50	5.50	5.50	5.50	5.50	7.00	7.00	7.00	7.00	14.50	14.50	14.50
Each, Galv..	11.00	11.00	11.00	11.00	11.00	14.00	14.00	14.00	14.00	29.00	29.00	29.00

The inlet of 90° Y branches is tapped, pitched ¾ inch to the foot.
The inlets on reducing fittings are always the smallest openings.

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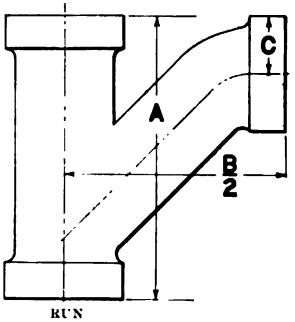
CAST IRON FITTINGS—DRAINAGE

RUN Fig. H-769

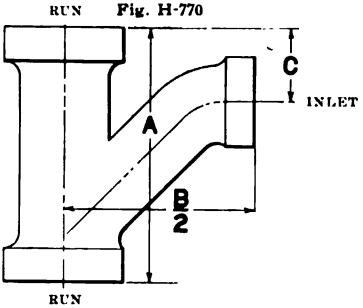


90° LONG TURN Y BRANCHES

Tee Pattern

Size.....inches	1¼	1½	2	2½	3	4	5	6	7	8
Dimensions A....inches	4 3/4	5 3/8	7 1/16	8 1/4	9 5/16	13 3/4	15 3/4	18 11/16	21 5/8	24 9/16
" B-2.. "	3 5/8	4 1/2	5 7/16	6 1/4	7 1/2	9 7/8	12 1/4	14 9/16	16 7/8	19 5/16
" C.... "	1 3/16	1 1/4	1 5/8	2	2 5/16	2 7/8	3 1/2	4 1/8	4 3/4	5 1/4
Each	1.00	1.15	1.35	1.90	2.25	3.50	5.50	7.00	11.50	14.50
Each, Galvanized.....	2.00	2.30	2.70	3.80	4.50	7.00	11.00	14.00	23.00	29 00

RUN Fig. H-770



REDUCING 90° LONG TURN Y BRANCHES

Tee Pattern

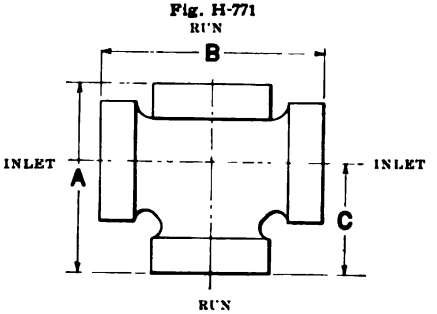
Size...inches	1¼x1¼	2x1¼	2¼x1¼	2¼x2	3x1¼	3x2	4x1¼	4x2	4x2¼	4x3	5x1½	5x2
Dimensions A..ins.	5 1/8	5 3/4	5 3/4	7 3/8	5 5/16	7 9/16	6 1/16	7 11/16	8 5/8	10	6 5/16	7 3/4
" B-2 "	3 7/8	4 3/8	4 9/16	5 3/4	5	6 1/16	5 7/16	6 5/8	7 1/16	8 1/16	6	7 1/8
" C "	1 3/16	1 5/16	1 5/16	1 5/8	1 5/16	1 5/8	1 5/16	1 5/8	2	2 3/8	1 3/8	1 5/8
Each	1.15	1.35	1.90	1 90	2.25	2.25	3 50	3.50	3.50	3.50	5.50	5.50
Each, Galv..	2.30	2.70	3.80	3.80	4.50	4.50	7.00	7.00	7.00	7.00	11.00	11.00

Size...inches	5x3	5x4	6x2	6x3	6x4	6x5	7x3	7x4	7x5	7x6	8x3	8x4
Dimensions A..ins.	10 1/4	13	7 15/16	10 3/8	13 1/16	16 1/16	10 7/8	13 5/16	....	....	10 5/8	13 3/8
" B-2 "	8 5/8	10 7/16	7 3/4	9 1/8	11	12 13/16	9 11/16	11 5/8	....	....	10 1/4	12
" C "	2 3/8	2 7/8	1 5/8	2 5/16	2 7/8	3 1/2	2 5/8	2 7/8	....	....	2 5/16	2 13/16
Each	5.50	5.50	7.00	7.00	7.00	7.00	11.50	11.50	11.50	11.50	14.50	14.50
Each, Galv..	11.00	11.00	14.00	14.00	14.00	14.00	23.00	23.00	23.00	23.00	29.00	29.00

The inlet of 90° long turn Y branches is tapped, pitched ¼ inch to the foot. The inlets on reducing fittings are always the smallest openings.

CAST IRON FITTINGS—DRAINAGE

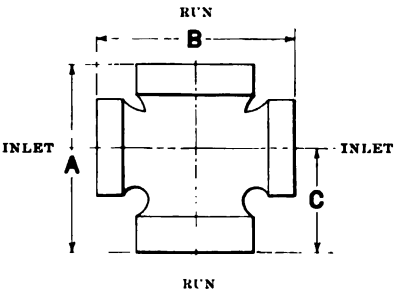
Fig. H-771



DOUBLE 90° Y BRANCHES—Tee Pattern

Size.....inches	1	1¼	1½	2	2½	3	4	5	6
Dimensions A, ins.	3¼	3¾	4¼	5⅜	6⅝	7¼	8¾	10⅝	11⅝
Dimensions B "	3⅞	4½	5	6⅛	7⅜	8½	10⅜	12¼	14¼
Dimensions C "	1⅝	2¼	2½	3⅛	3⅜	4¼	5⅜	6⅛	7⅛
Each..... "	1.00	....	1.25	1.50	....	3.00	4.00	6.50	8.50
Each, Galv .. "	2.00	....	2.50	3.00	....	6.00	8.00	13.00	17.00

Fig. H-772



DOUBLE REDUCING 90° Y BRANCHES—Tee Pattern

Size.....inches	2x1½	2½x2	3x1½	3x2	4x2	5x4	6x2	6x4	6x5
Dimensions A, ins	4⅝	5½	5⅛	5⅜	5⅝	9⅛	6¼	9¼	10⅜
Dimensions B "	5⅞	6⅝	6⅝	7¼	8⅛	11⅜	10¼	12⅜	13¼
Dimensions C "	2⅛	3¼	2⅝	3⅜	3⅜	5⅜	3⅝	5⅞	6¼
Each..... "	1.50	2.25	3.00	3.00	4.00	6.50	8.50	8.50	8.50
Each, Galv... "	3.00	4.50	6.00	6.00	8.00	13.00	17.00	17.00	17.00

The inlets of double 90° Y branches are tapped, pitched ¾ inch to the foot. The inlets on reducing fittings are always the smallest openings.

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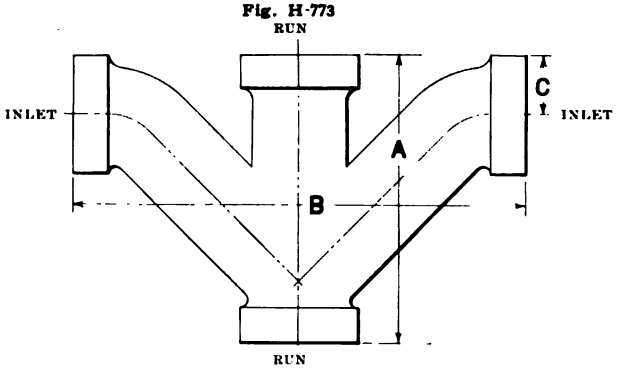
CAST IRON FITTINGS—DRAINAGE

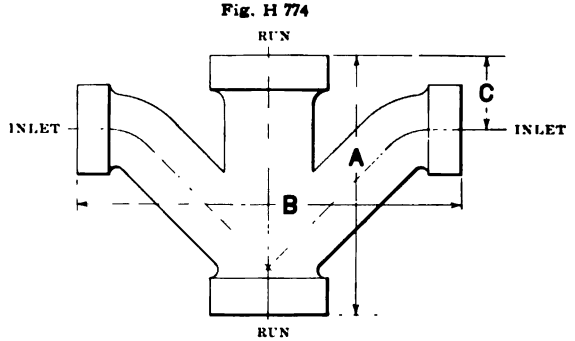
Fig. H-773



DOUBLE 90° LONG TURN Y BRANCHES—Tee Pattern

Size.....inches	1¼	2	2½	3	4	5	6	7	8
Dimensions A in.	5⅜	7 1/16	8¼	9 13/16	13 3/4	15 3/4	18 11/16	21 5/8	24 9/16
Dimensions B "	8¼	10 7/8	12½	15	19 3/4	24½	29 1/8	33 3/4	38 5/8
Dimensions C "	1¼	1 5/8	2	2 5/16	2⅞	3½	4 1/8	4 3/4	5¼
Each	1.25	1.50	2.25	3.00	4.00	6.50	8.50	15.00	18.00
Each, Galvaniz'd	2 50	3.00	4.50	6.00	8.00	13.00	17.00	30.00	36.00

Fig. H 774



DOUBLE REDUCING 90° LONG TURN Y BRANCHES—Tee Pattern

Size.....inches	2x1½	3x1½	3x2	4x2	5x4	6x2	6x4	6x5
Dimensions A..inches	5¾	5 15/16	7 9/16	7 11/16	13	7 15/16	13 1/16	16 1/16
Dimensions B.. "	8¾	10	12 1/16	13 1/4	20 7/8	15½	22	25 5/8
Dimensions C.. "	1 5/16	1 5/16	1 5/8	1 5/8	2 7/8	1 5/8	2 7/8	3½
Each.....	1.50	3.00	3.00	4.00	6.50	8.50	8.50	8 50
Each, Galvanized.....	3.00	6.00	6.00	8.00	13.00	17.00	17.00	17.00

The inlets of double 90° long turn Y branches are tapped, pitched ¼ inch to the foot. The inlets on reducing fittings are always the smallest openings.

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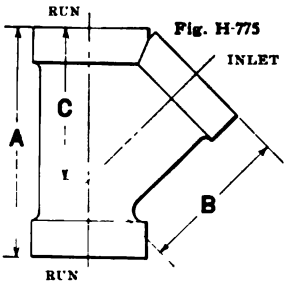

Fig. H-775

CAST IRON FITTINGS
DRAINAGE

45° Y BRANCHES

Size.....inches	1¼	1½	2	2½	3	4	5	6	7	8	10
Dimen. A....inches	5	5½	6 7/16	7 7/8	9	10 7/8	12 5/16	14 3/4	16 11/16	18 13/16	20
" B, "	3 1/4	3 5/8	4 5/16	5 3/8	6 5/16	7 11/16	9 5/16	10 3/4	12 1/4	13 9/16	16 1/8
" C, "	3 1/4	3 5/8	4 5/16	5 3/8	6 5/16	7 11/16	9 5/16	10 3/4	12 1/4	13 9/16	16 1/8
Each.....	.70	.80	1.00	1 50	1.70	2.60	3.50	5.50	12.00	15.00	21.00
Each, Galvanized..	1.40	1.60	2.00	3.00	3.40	5.20	7.00	11.00	24.00	30.00	42.00

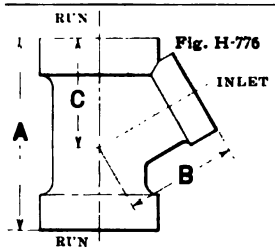

Fig. H-776

REDUCING 45° Y BRANCHES

Size .....inches	1½x1¼	2x1½	2½x1½	2½x2	3x1½	3x2	3x2½	4x1½	4x2
Dimen. A..inches	....	5 7/8	6 7/16	7 1/16	6 5/8	7 3/8	8	7 3/16	7 11/16
" B, "	....	4 1/8	4 5/8	5 1/8	5 1/16	5 3/8	5 13/16	6 1/16	6 5/16
" C, "	....	4 1/16	4 9/16	4 15/16	4 15/16	5 5/16	5 11/16	5 3/4	6
Each	.80	1.00	1.50	1.50	1.70	1.70	1.70	2.60	2.60
Each, Galvanized	1.60	2.00	3.00	3.00	3.40	3.40	3.40	5.20	5.20

Size .....inches	4x3	5x2	5x3	5x4	6x2	6x3	6x4	6x5	7x3
Dimen. A..inches	9 1/4	8 1/4	9 13/16	11 3/8	8 7/16	10	11 7/8	13	10
" B, "	7 3/16	7 3/16	7 7/8	8 1/2	8 1/16	8 3/4	9 3/8	10	9 5/8
" C, "	6 7/8	6 7/8	7 5/8	8 7/16	7 9/16	8 5/16	9 1/16	9 13/16	8 7/8
Each	2.60	3.50	3.50	3.50	5.50	5.50	5.50	5.50	12.00
Each, Galvanized	5.20	7.00	7.00	7.00	11.00	11.00	11.00	11.00	24.00

Size.....inches	7x4	7x5	7x6	8x3	8x4	8x5	8x6	.....	....
Dimen. A..inches	11 7/16	16 11/16	16 11/16	....	11 7/16	.....	14 15/16	.....	....
" B, "	10 1/4	10 15/16	11 9/16	....	11	.....	12 3/8	.....	....
" C, "	9 11/16	10 1/2	11 3/8	....	10 7/16	.....	11 7/8	.....	....
Each	12.00	12.00	12.00	15.00	15.00	15.00	15.00	.....	....
Each, Galvanized	24.00	24.00	24.00	30.00	30.00	30.00	30.00	.....	....

The inlets on reducing fittings are always the smallest openings.

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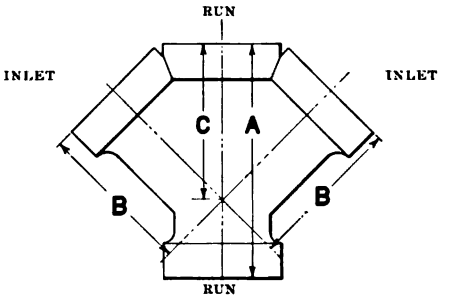
CAST IRON FITTINGS—DRAINAGE

45° DOUBLE Y BRANCHES

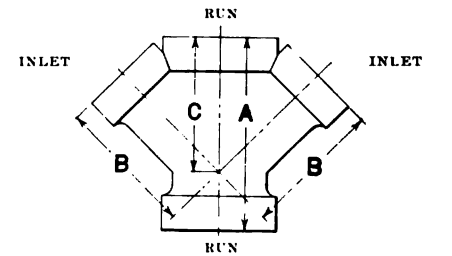
Fig H-777



Size.....inches	1¼	1½	2	2½	3	4	5	6	7	8	10
Dimen. A....inches	5	5½	6 7/16	7 7/8	9	10 7/8	12 5/16	14 3/4	16 11/16	18 13/16	20
" B.... "	3 1/4	3 5/8	4 5/16	5 3/8	6 5/16	7 11/16	9 5/16	10 3/4	12 1/4	13 9/16	16 1/8
" C.... "	3 1/4	3 5/8	4 5/16	5 3/8	6 5/16	7 11/16	9 5/16	10 3/4	12 1/4	13 9/16	16 7/8
Each.....	.90	1.00	1.30	1.75	2.20	3.10	4.25	6.50	15.00	18.00	25.00
Each, Galvanized..	1.80	2.00	2.60	3.50	4.40	6.20	8.50	13.00	30.00	36.00	50.00

REDUCING 45° DOUBLE Y BRANCHES

Fig. H-778



Size.....inches	2x1½	2½x1½	3x1½	3x2	4x2	5x2	6x2	6x4
Dimensions A .inches	5 7/8	6 7/16	6 5/8	7 3/8	7 11/16	8 1/4	8 7/16	11 7/8
" B . "	4 1/8	4 5/8	5 1/16	5 3/8	6 5/16	7 5/16	8 1/16	9 3/8
" C . "	4 1/16	4 9/16	4 15/16	5 5/16	6	6 7/8	7 9/16	9 1/16
Each.....	1 30	1.75	2.20	2.20	3.10	4.25	6.50	6.50
Each, Galvanized....	2 60	3.50	4.40	4.40	6.20	8.50	13.00	13.00

The inlets on reducing fittings are always the smallest openings.

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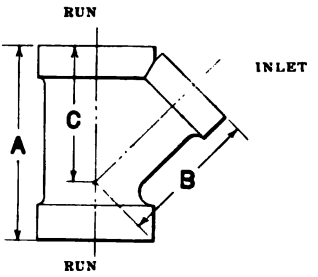
CAST IRON FITTINGS—DRAINAGE

60° Y BRANCHES

Fig. H-779

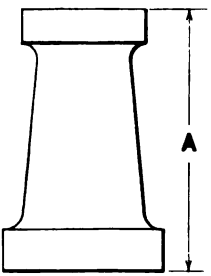


Size.....inches	1½ x 1½	2 x 1½	3 x 2	4 x 2	4 x 3	5 x 2	5 x 3
Dimensions, A.....inches	4 5/8	4 15/16	6 7/16	6 11/16	....	....	8 1/2
" B..... "	2 5/8	3 1/16	4 1/8	4 3/4	....	....	6
" C..... "	2 5/8	2 15/16	3 5/16	4 5/16	....	....	5 9/16
Each.....	.80	1.00	1.70	2.60	2.60	4.50	4.50
Each, Galvanized.....	1.60	2.00	3.40	5.20	5.20	9.00	9.00

Size.....inches	5 x 4	6 x 2	6 x 4	6 x 5	8 x 4	8 x 6	....
Dimensions, A.....inches	....	....	....	....	....	....	....
" B..... "	....	....	....	....	....	....	....
" C..... "	....	....	....	....	....	....	....
Each.....	4.50	7.00	7.00	7.00	15.00	15.00	....
Each, Galvanized.....	9.00	14.00	14.00	14.00	30.00	30.00	....

INCREASERS

Fig. H-780



Size.....inches	3 x 2	4 x 2	4 x 3	5 x 2	5 x 3	5 x 4	6 x 4	6 x 5	8 x 6
Dimensions, A.....inches	9	9	9	9	9	9	9	9	9
Each.....	1.00	1.50	1.50	2.00	2.00	2.00	3.00	3.00	5.00
Each, Galvanized.....	2.00	3.00	3.00	4.00	4.00	4.00	6.00	6.00	10.00

The inlets on reducing fittings are always the smallest openings.

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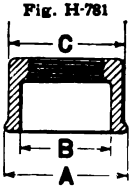
CAST IRON FITTINGS—DRAINAGE

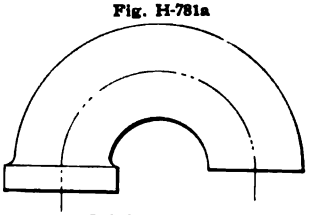
Fig. H-781



ROOF CONNECTIONS

Size .....inches	2	3	4	5	6
Dimensions A.....	3 3/16	4 15/16	6	7 1/16	8 3/16
Dimensions B.....	3	4 1/8	5 1/8	6	7 1/8
Dimensions C.....	3 1/2	4 9/16	5 5/8	6 11/16	7 3/4
Each	.50	.80	1.00	1.20	2.00
Each, Galvanized.....	1.00	1.60	2.00	2.40	4.00

Fig. H-781a

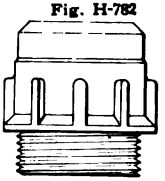


CAPPINGS

For Air Inlet Pipes

Size.....inches	2	3	4	5
Each.....	1.20	1.30	1.50	2.00

Fig. H-782



BRASS SOLDERING NIPPLES

Size.inches	1	1 1/4	1 1/2	2	3	4	5
Each.....	.42	.63	.84	1.17	2.34	4.00	8.00

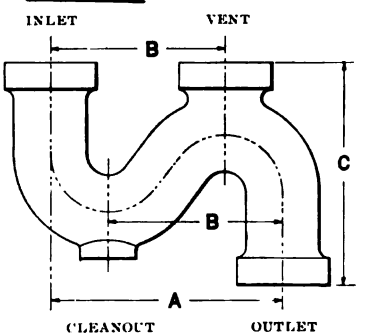


Fig. H-783

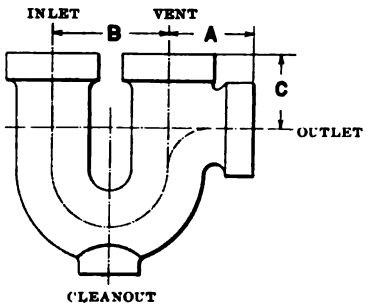
S TRAPS

Size.....inches	2	3	4	5	6
Dimensions A.....inches	8 1/4	10 3/4	14 1/8	16 3/4	20 1/4
Dimensions B..... "	6 1/4	8 1/16	10 5/8	12 9/16	15 5/16
Dimensions C..... "	8	11 1/4	13 3/4	16 7/8	19 3/4
Size of Cleanout..... "	1	1 1/4	2	2	2
Size of Vents..... "	2	3	4	4	4
Each.....	3.50	4.00	6.50	10.00	20.00
Each, Galvanized.....	7.00	8.00	13.00	20.00	40.00

Cappings and S traps are not carried in stock, but made to order.

CAST IRON FITTINGS—DRAINAGE

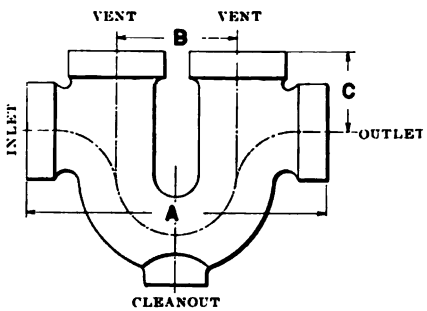
Fig. H-784



HALF S TRAPS

Size.....inches	1½	2	3	4	5	6	7	8
Dimensions A...inches	2½	3 1/16	4 3/16	5 1/8	6 1/16	6 9/16	7 3/4	8 15/16
Dimensions B... "	3 3/8	4	5 3/8	7	8 3/8	10 1/8	11 1/4	12 3/8
Dimensions C... "	2 1/4	2 9/16	3 1/2	4 3/16	4 3/4	5 7/16	6 1/8	6 3/4
Size of Vent.... "	1½	2	3	4	4	4	5	6
Each	1.90	2.25	3.00	4.50	7.50	14.00	18.00	22.00
Each, Galvanized	3.80	4.50	6.00	9.00	15.00	28.00	36.00	44.00

Fig. H 785



RUNNING TRAPS

Size.....inches	2	3	4	5	6	7	8
Dimensions A.....inches	10 1/8	13 3/4	17 1/4	20 1/2	23 1/4	26 3/4	30 1/4
Dimensions B..... "	4	5 3/8	7	8 3/8	10 1/8	11 1/4	12 3/8
Dimensions C..... "	2 9/16	3 1/2	4 3/16	4 3/4	5 7/16	6 1/8	6 3/4
Size of Vents..... "	2	3	4	4	4	5	6
Each	2.40	3.50	5.00	8.00	15.00	20.00	25.00
Each, Galvanized.....	4.80	7.00	10.00	16.00	30.00	40.00	50.00

The outlets of half S traps and inlets and outlets of running traps are tapped, pitched ¼ inch to the foot.

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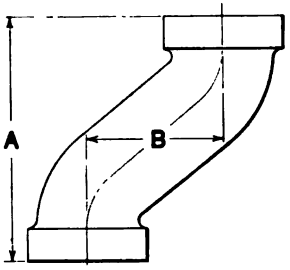
CAST IRON FITTINGS — DRAINAGE

Fig H 786



OFFSETS

Size Inches	Offset Inches B	Length Inches A	Each	Each Galvanized	Size Inches	Offset Inches B	Length Inches A	Each	Each Galvanized
2	4	7½	1.75	3.50	4	10	15¾	5.75	11.50
2	6	9½	2.00	4.00	4	12	17¾	6.50	13.00
2	8	11½	2.25	4.50	5	6	12⅝	7.50	15.00
2	10	13½	2.75	5.50	5	8	14⅝	8.50	17.00
3	4	8¾	2.75	5.50	5	10	16⅝	9.50	19.00
3	6	10¾	3.25	6.50	5	12	18⅝	10.50	21.00
3	8	12¾	3.75	7.50	6	6	13⅝	10.00	20.00
3	10	14¾	4.25	8.50	6	8	15⅝	11.00	22.00
4	4	9¾	4.00	8.00	6	10	17⅝	12.00	24.00
4	6	11¾	4.50	9.00	6	12	19⅝	13.50	27.00
4	8	13¾	5.00	10.00	..	..	....	.....	.....

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CAST IRON FITTINGS—DRAINAGE

Fig. H-787

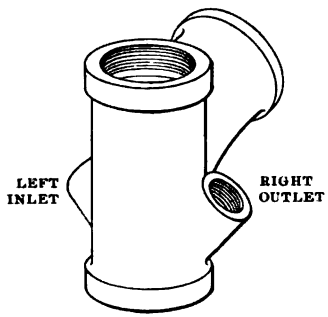
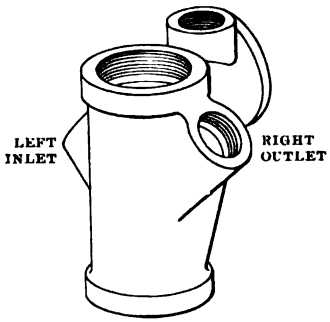


Fig. H-788



90° Y BRANCHES WITH AUXILIARY INLETS — Closet Tees

Size ..... inches	3	4	5 x 4	6 x 4
Price, with 2-in. Inlet on Right Side only ..... each	3.00	3.50	6.50	8.00
" " 2- " " " " " " Galv.. "	6.00	7.00	13.00	16.00
" " 2- " " " Left " " ..... "	3.00	3.50	6.50	8.00
" " 2- " " " " " " Galv.. "	6.00	7.00	13.00	16.00
" " 2- " " " Both Sides..... "	3.50	4.00	7.00	10.00
" " 2- " " " " " Galv..... "	7.00	8.00	14.00	20.00
" " 2- " " " Right Side and 2-in. Top Inlet..... "	....	5.50	7.00	9.00
Price, with 2-in. Inlet on Right Side and 2-in. Top Inlet, Galvanized..... "	....	11.00	14.00	18.00
Price, with 2-in. Inlet on Left Side and 2-in. Top Inlet..... "	....	5.50	7.00	9.00
Price, with 2 in. Inlet on Left Side and 2-in. Top Inlet, Galvanized ..... "	....	11.00	14.00	18.00
Price, with 2-in. Inlet on Both Sides and 2-in. Top Inlet..... "	....	6.00	7.50	10.00
Price, with 2-in. Inlet on Both Sides and 2-in. Top Inlet, Galvanized ..... "	....	12.00	15.00	20.00

The 90° inlet of closet tees is tapped, pitched ¼ inch to the foot.
The inlets on reducing fittings are always the smallest openings.

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MATERIAL MADE AT PLANTS OF NATIONAL TUBE COMPANY OTHER THAN THE KEWANEE PLANT

WELDED TUBULAR MATERIAL

Merchant Pipe, Steam, Gas and Water Pipe, Wrought Pipe, Black and Galvanized Pipe, Square Pipe.

Extra Strong and Double Extra Strong Pipe, Hydraulic Pipe, Oil and Gas Line Pipe.

Special Steel Lap-Welded Pipe, fitted with Converse Patent Lock Joint and Matheson Joint.

Kimberly Joint Pipe, Subway Pipe, Interior Conduit Pipe, Tuyere Pipe, Bedstead Pipe, Kalameined Pipe, Asphalted Pipe.

Artesian, Salt and Oil Well Tubing and Casing Drive Pipe.

Boiler Tubes, Arch Pipes, Stay Tubes, Water Grates, Safe Ends for Boiler Tubes.

Steam Drums, Drum Legs, Heater Pipe, Tubular Tumbling Rods.

Fence Posts, Air Brake and Signal Pipe, Hollow Stay Bolt Iron, Ocean Pier Piles.

Tubular Poles for Telegraph, Telephone and Electric Light Service.

SHELBY SEAMLESS STEEL TUBING

Boiler Tubes for Stationary, Marine, Locomotive, Power, Automobile and all types of Boilers.

Stay Tubes, Safe Ends, Arch Tubes, Dry Pipes.

Round, Square, Rectangular and Oval Seamless Tubing for all sorts of Mechanical Uses. Sizes ⅛ inch to 30 inches O. D., with thickness of walls up to 1½ inch.

Bicycle and Bedstead Tubing, Chandelier Tubing, Carrier Tubes, Gravity Carriers, Cream Separator Bowls; Cylinders for Carbonic Acid Gas, Compressed Air, etc.; Die Stock Handles, Drill Rods.

Gongs—Bells for Locomotive, Fire Alarm, Church, etc.

Hose Poles or Mandrels, Hollow Shafting, Trolley Poles, Tempering Pots, Working Barrels, Tanks.

Literature and full information regarding any of the above will be furnished on application.

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STANDARD
BRASS VALVES

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STANDARD BRASS VALVES

On the following pages we illustrate and list a full line of high-class standard valves.

In addition, we show Globe, Angle, and Gate Valves, to which the "Kewanee" principle is applied. The non-corrosive joint, together with the spherical connection feature which makes a secure joint even when pipe is out of line, are of great service. This construction also obviates the use of a gasket and one nipple and saves considerable labor in making up.

We can supply practically any of our brass valves fitted with "Kewanee" union attachment at prices which will be quoted on application. For advantages of "Kewanee" union connection, see "Kewanee" section.

Our standard Jenkins disc valves can be furnished either with composition or soft annealed copper discs.

For specific recommendations, see page on which valve is illustrated.

All these standard globe and angle valves are so constructed as to admit of being packed under pressure when wide open.

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WHEELS AND HANDLES

For Brass Valves

Fig. H-800
Cast Iron Corrugated

A

Fig. H-801
Cast Iron Round

B

Fig. H-802
Cast Iron Bar Pattern

C

Fig. H-803
Wood With Brass Plates and Screw

D

Fig. H-804
Polished Brass Tee Handle

E

Fig. H-805
Polished Brass Cross Handle

F

NET PRICE LIST

Size of Valve .....inches	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Style A, Fig. H-800.....each	.03	.03	.03	.04	.05	.06	.07	.08	.10	.15	.35	.45
" B, Fig. H-801..... "	.04	.04	.04	.05	.06	.07	.08	.10	.15	.18	...	...
" C, Fig. H-802..... "	...	...	.05	.06	.08	.13	.15	.20	...	...	...	...
" D, Fig. H-803, Complete, including Top and Bottom Plate and Screw.. "	.....		.10	.10	.10	.10	.10	.10	...	...	...	...
Top and Bottom Plate and Screw Only For Style D.....per set	...	...	.05	.05	.05	.05	.05	.05	...	...	...	...
Style E, Fig. H-804.....each	...	.15	.17½	.20	...	...	...	...	..	..	..	....
" F, Fig. H-805..... "	...	.20	.22½	.25	.....			.	..			

Style E handles can be furnished on polished brass globe and angle valves shown on page 267.

In ordering, care should be taken to state size and figure number of valve the wheel or handle is to fit.

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NUMBER TWO BRASS GLOBE AND ANGLE VALVES

Steam Metal

Fig. H-806
Globe Valve

Fig. H-807
Angle Valve

Size.....inches	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Each.....	.72	.77	1.00	1.26	1.80	2.52	3.50	5.30

Standard valves will be furnished unless otherwise specified.

These are competition valves and are somewhat lighter than our standard valves shown on page 261.

Be careful to specify whether globe or angle valves are wanted.

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STANDARD BRASS GLOBE AND ANGLE VALVES

Steam Metal

Suitable for Steam Working Pressures of 125 Pounds, in Sizes up to and Including 3 inch; in Larger Sizes for Steam Working Pressures of 100 Pounds

Fig. H-808
Globe Valve

Fig. H-809
Angle Valve

Size..... inches	⅛	¼	⅜	½	¾	1	1¼
Each	.72	.72	.77	1.00	1.26	1.80	2.52
Size..... inches	1½	2	2½	3	3½	4	.....
Each	3.50	5.30	10.00	14.40	26.50	36.00	.....

Be careful to specify whether globe or angle valves are wanted.

These valves are so constructed as to admit of being packed under pressure when wide open.

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STANDARD BRASS CROSS VALVES

Steam Metal

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H 810
Cross Valve

Size.....inches	¼	⅜	½	¾	1	1¼	1½	2
Each.....	1.25	1.25	1.50	2.00	2.50	3.50	5.00	8.00

These valves are so constructed as to admit of being packed under pressure when wide open.

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STANDARD BRASS GLOBE AND ANGLE VALVES

Steam Metal
Wood or Finished Brass Wheel
Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-814
Globe Valve

WOOD WHEEL

Size.....inches	¼	⅜	½	¾	1	1¼	1½	2
No. H-811, Rough Body, Plain.each	1.15	1.25	1.40	1.75	2.35	3.25	4.35	6.85
No. H-812, Rough Body, Plated Trimmings.. "	1.30	1.45	1.60	2.00	2.65	3.55	4.65	7.35
No. H-813, Rough Body, Plated All Over.... "	1.40	1.55	1.70	2.10	2.75	3.70	4.85	7.60
Fig. H-814, Finished All Over. "	1.85	2.00	2.15	2.50	3.25	4.35	5.75	9.00
No. H-815, Finished and Plated All Over... "	2.15	2.30	2.45	2.85	3.65	4.80	6.25	9.75

WITH FINISHED BRASS WHEEL

Size.....inches	¼	⅜	½	¾	1	1¼	1½	2
No. H-816, Finished All Over..each	2.75	3.00	3.15	3.50	4.25	5.60	7.00	10.25
No. H-817, Finished and Plated All Over... "	3.25	3.50	3.70	4.10	4.90	6.30	7.75	11.25

Be careful to specify whether globe or angle valves are wanted.
These valves are so constructed as to admit of being packed under pressure when wide open. These valves are made to order only. In ordering be particular to state whether wood or brass wheel is wanted.

STANDARD BRASS GLOBE AND ANGLE VALVES

Steam Metal
With "Kewanee" Union Attachment
(Patented)

Suitable for Steam Working Pressures of 125 Pounds, in Sizes up to and Including 3 Inches; in Larger Sizes for Steam Working Pressures of 100 Pounds

Fig. H 818
Angle, Male Union

Fig. H-819
Globe, Female Union

Size ..... inches	⅛	¼	⅜	½	¾	1	1¼
Each	.72	.72	.77	1.00	1.26	1.80	2.52
Size ..... inches	1½	2	2½	3	3½	4	.....
Each	3.50	5.30	10.00	14.40	26.50	36.00	.....

Be careful to specify whether globe or angle valves are wanted.

These valves are so constructed as to admit of being packed under pressure when wide open.

We can furnish "Kewanee" union attachment on any brass valve which we make.

The above valves will be furnished with male union unless otherwise specified.

Both globe and angle valves can be furnished with female "Kewanee" union if so ordered.

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STANDARD BRASS GLOBE AND ANGLE VALVES

Steam Metal. With Lock and Shield

Suitable for Working Pressures up to 125 Pounds

Fig. H-822
Globe Valve

Fig. H-824
Key No. 2

Fig. H-826
Angle Valve

Size .....inches	⅜	½	¾	1	1¼
No. H-820, Rough Body, plain.....each	1.10	1.35	1.60	2.25	3.25
No. H-821, Rough Body, plated all over "	1.40	1.65	1.95	2.65	3.70
Figs. H-822 and H-826, Finished all over "	1.60	1.85	2.15	2.85	4.00
No. H-823, Finished and plated all over "	1.90	2.15	2.50	3.25	4.45
Fig. H-824, Keys, extra, plain..... "	.18	.18	.50	.50	.50
No. H-825, Keys, extra, plated..... "	.25	.25	.70	.70	.70

Used chiefly on natural gas connections.

Be careful to specify whether globe or angle valves are wanted.

These valves are so constructed as to admit of being packed under pressure when wide open.

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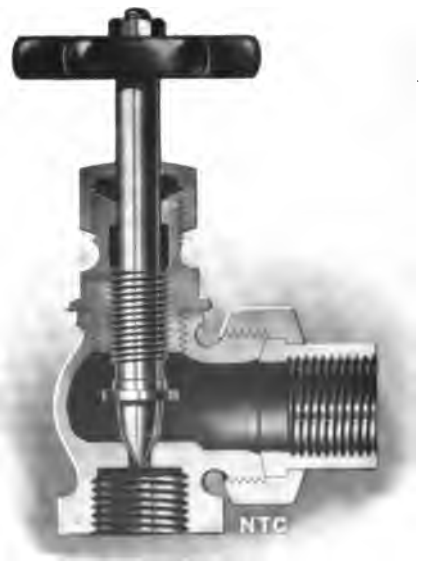
STANDARD NEEDLE POINT BRASS GLOBE AND ANGLE VALVES

Steam Metal

Suitable for Working Pressures up to 125 Pounds

Fig. H-829
Angle, Female Union



Size ..... inches	1/4	3/8	1/2	3/4
Size Feed Opening ..... inches	1/16	1/8	3/16	1/4
No. H-827, Globe, Female Openings ..... each	1.40	1.50	2.00	2.50
No. H-828, Angle, Female Openings ..... "	1.40	1.50	2.00	2.50
Fig. H-829, Angle, with Union ..... "	2.00	2.20	3.00	3.50

Be careful to specify whether globe or angle valves are wanted.

These valves are used for regulating fuel oil feed, and are made to order only.

Unless size of opening for feed is specified, will furnish as above.

These valves are so constructed as to admit of being packed under pressure when wide open.

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STANDARD BRASS ANGLE VALVES

Cross Handle Polished Brass, or Polished and Nickel Plated

Fig. H-831
Angle

Fig. H-833
Angle, with Slip Joint

Fig. H-831

Size.....inches	3/8	1/2	3/4
No. H-830, Polished.....each	1.40	1.75	2.00
Fig. H-831, Polished and Nickel Plated..... "	1.60	2.00	2.30

Fig. H-833 — SLIP JOINT

Size.....inches	1/2 x 3/8
No. H-832, Polished.....each	2.00
Fig. H-833, Polished and Nickel Plated..... "	2.50

These are suitable for use on exposed plumbing.

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BRASS Y VALVES

Brass or Jenkins Disc

Steam Metal

Suitable for Steam Working Pressures up to 100 Pounds

Fig. H-834

Fig. H-835

Size.....inches	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Fig. H-834, Brass Disc...	.72	.77	1.00	1.26	1.80	2.52	3.50	5.30	10.00	14.40
Fig. H-835, Jenkins Disc.	1.10	1.25	1.60	2.20	2.80	4.00	5.50	8.75	15.75	22.00

For price lists on extra discs, see page 276.

Position of hand wheel is very convenient when used in vertical pipe line.

The construction of this valve is such that it is nearly a straight-way valve.

These valves are so constructed as to admit of being packed under pressure when wide open.

Another advantage over the globe valve construction is the form of the diaphragm, which prevents the unequal expansion that is responsible for so many leaks in globe valves.

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BRASS Y VALVES—SPECIAL PATTERN

"High-Duty-Metal"

Suitable for Steam Working Pressures up to 150 Pounds

Fig. H-836

Size.....inches	⅜	½	¾	1	1¼	1½	2	2½	3
Each.....	1.50	1.90	2.50	3.50	5.00	7.00	11.00	20.00	29.00

Position of handwheel is very convenient when used in vertical pipe lines.

For description of properties of "High-Duty-Metal," see page 295.

This is nearly a straight-way valve, and the shape of the diaphragm prevents the unequal expansion that is responsible for so many leaks in globe valves.

All valves from ¾ inch to 3 inches inclusive have stuffing box glands.

These valves are so constructed as to admit of being packed under pressure when wide open.

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STANDARD BRASS COKE OVEN VALVES

Steam Metal. Leather Discs.

Suitable for Working Pressures up to 125 Pounds

Fig. H-837 Fig. H-838

Hose Connection

Fig. H-839

Size.....inches	1
Fig. H-839, Without Hose Connection.....each	1.50
Figs. H-837 and H-838, Hose Connection Extra.....per set	.40

The hose end of these valves has an adopted thread. If any special thread is required, it will be necessary to send us a sample thread, preferably the male end of a hose coupling. An extra charge will be made if furnished with special threads.

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SPECIAL BRASS HOSE VALVES

Steam Metal. Leather Discs

Fig. H-840

Prices on application.

In ordering or making inquiries, always furnish gauge for male thread.

This valve is stronger and heavier than the ordinary hose valve. It has a long hose connection and is recommended in cases where the ordinary standard valve will not meet the requirements.

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STANDARD BRASS ADJUSTABLE CHECK VALVES

Steam Metal

Suitable for Steam Working Pressures up to 125 Pounds

Fig H 841

Size..... inches	¾	1	1¼	2½
Price..... each	1.80	2.60	3.50	4.50

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STANDARD BRASS HORIZONTAL CHECK VALVES

Steam Metal

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-842
Regular

Size ....inches	⅛	¼	⅜	½	¾	1	1¼
Each	.65	.65	.70	.90	1.15	1.60	2.25
Size ....inches	1½	2	2½	3	3½	4	....
Each	3.15	4.75	9.00	13.00	24.00	32.50	....

This valve is also made in No. 2 pattern having hexagon cap, in sizes ¼ inch to 2 inch inclusive.

Fig. H-843
With Drip Cock

Size ....inches	½	¾	1	1¼	1½
Fig. H-843, With Drip Cock ....each	2.15	2.55	3.15	4.05	5.40
No. H-844, Without Drip Cock .... "	1.85	2.20	2.70	3.60	4.90

STANDARD BRASS VERTICAL AND ANGLE CHECK VALVES

Steam Metal

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-845
Vertical Valve

Fig. H-846
Angle Valve

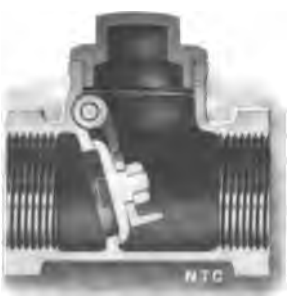
Size.....inches	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Fig. H-845, Vertical..each	.72	.77	1.00	1.26	1.80	2.52	3.50	5.30	...	...
Fig. H-846, Angle.... "	.72	.77	1.00	1.26	1.80	2.52	3.50	5.30	10.00	14.40

STANDARD BRASS SWING CHECK VALVES

Steam Metal

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-487



Size.....inches	⅜	½	¾	1	1¼	1½	2	2½	3
Each.....	2.15	2.25	2.75	3.50	4.25	5.50	7.50	15.00	22.00

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"KEWANEE" UNION SWING CHECK VALVE

Brass Body

(Patented)

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-848

Fig. H-849

WITH FEMALE UNION

Size.....inches	⅜	½	¾	1	1¼	1½	2	2½	3
Black.....each	2.15	2.25	2.75	3.50	4.25	5.50	7.50	15.00	22.00
Galv..... "	2.25	2.45	3.00	3.85	4.65	6.25	8.25	16.75	24.25

It is good practice to place a union in the pipe line near the place where a check valve is used.

This formerly required the use of a check valve, a separate union and a nipple to connect the two.

The Kewanee Union Check Valve enables the fitter to dispense with the nipple, and saves the time consumed in assembling the three parts. It marks a distinct advance in convenience and economy.

The check valve is provided with a clean-out at bottom. The union has the "Kewanee" brass-against-iron non corrosive ball joint. Made with male or female union, but is always furnished with female union unless otherwise specified.

These valves are equally serviceable in vertical or horizontal positions.

This valve is furnished at a much lower cost than the old combination which it represents, and not only saves material, but also labor involved.

Fig. H-850 shows a method of installation whereby an air chamber is formed and water hammer avoided.

Fig. H-850

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SPECIAL PATTERN JENKINS DISC BRASS GLOBE AND ANGLE VALVES

Steam Metal

Suitable for Steam Working Pressures up to 100 Pounds; for Cold Water Working Pressures up to 125 Pounds

Fig. H-851
Globe Valve

Fig. H-852
Angle Valve

Size.....inches	⅛	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Each.....	1.10	1.10	1.25	1.60	2.20	2.80	4.00	5.50	8.75	15.75	22.00

EXTRA COPPER OR JENKINS DISCS

Size.....inches	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Each.....	.06	.08	.08	.10	.12	.18	.24	.36	.48	.66

Can also furnish with renewable soft copper disc, see page 278.

Be careful to specify whether globe or angle valves are wanted.

These valves are so constructed as to admit of being packed under pressure when wide open.

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SPECIAL PATTERN JENKINS DISC BRASS GLOBE AND ANGLE VALVES

Steam Metal
Wood or Finished Brass Wheels
Suitable for Steam Working Pressures up to 100 Pounds; for Cold Water Working Pressures up to 125 Pounds

Fig. H-855
Globe Valve

WOOD WHEEL

Size .....inches	½	¾	1	1¼	1½	2
No. H-853, Rough Body, Plain...each	2.00	2.50	3.20	4.50	6.25	10.50
" H-854 " " Plated all over "	2.40	2.90	3.60	4.90	6.65	10.90
Fig. H-855, Finished all over..... "	2.50	3.00	3.75	5.25	7.25	11.75
No. H-856, Finished and Plated all over.. "	2.90	3.40	4.15	5.65	7.65	12.15

WITH FINISHED BRASS WHEEL

Size .....inches	½	¾	1	1¼	1½	2
No. H-857, Finished all over....each	3.50	4.00	4.75	6.50	8.50	13.00
No. H-858, Finished and Plated all over.. "	4.15	4.65	5.40	7.15	9.15	13.65

Can also be furnished with renewable soft copper disc. See page 278.
For price list on extra discs, see opposite page.
Be careful to specify whether globe or angle valves are wanted.
These valves are made to order only. In ordering be particular to state whether wood or brass wheel is wanted.
These valves are so constructed as to admit of being packed under pressure when wide open.

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SPECIAL PATTERN JENKINS DISC BRASS GLOBE AND ANGLE VALVES

Steam Metal. Soft Copper Discs

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-859

Globe Valve

Size .....inches	1/4	3/8	1/2	3/4	1
Globe and Angle Valves.....each	1.10	1.25	1.60	2.20	2.80
Extra Copper Discs..... "	.06	.08	.08	.10	.12
Size .....inches	1 1/4	1 1/2	2	2 1/2	3
Globe and Angle Valves.....each	4.00	5.50	8.75	15.75	22.00
Extra Copper Discs..... "	.18	.24	.36	.48	.66

Be careful to specify whether globe or angle valves are wanted.

These valves are so constructed as to admit of being packed under pressure when wide open.

These soft annealed pure copper discs are made the same size and interchangeable with our Jenkins discs used in valves listed on pages 276, 277.

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SPECIAL PATTERN JENKINS DISC BRASS CHECK VALVES

Suitable for Steam Working Pressures up to 100 Pounds; for Cold Water Working Pressures up to 125 Pounds

Fig. H-860
Horizontal Valve

Fig. H-861
Angle Valve

Size.....inches	¼	⅜	½	¾	1	1¼	1½	2
Each.....	1.10	1.20	1.30	1.90	2.60	3.60	5.00	7.50

For price list on extra discs, see page 276.

Be careful to specify whether globe or angle valves are wanted.

Can also furnish with soft copper disc at the same price, in which case valves will be suitable for 125 pounds steam working pressures.

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STEAM METAL VALVES

LOW PRESSURE BRASS SAFETY VALVES

Steam Metal. Iron Ball

Fig. H-862

Size .....inches	½	¾	1	1¼	1½	2
Each	2.25	2.60	3.30	4.50	6.35	8.65

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STANDARD BRASS SAFETY VALVES

Suitable for Steam Working Pressures up to 100 Pounds

Fig. H-863
Cross Pattern

ANGLE AND CROSS

Size.....inches	¼	⅜	½	¾	1	1¼	1½	2
Fig. H-863, Brass Disc.....each	2.20	2.50	3.25	3.90	4.70	7.15	9.00	12.50
No. H-864, Jenkins Disc..... "	....	....	4.12	4.95	5.50	8.25	10.15	15.40

Above cut represents end view of a cross pattern valve.

We can also supply these valves with angle bodies at same list prices.

For price list on extra discs, see page 276.

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STANDARD BRASS EXPANSION JOINTS

Steam Metal

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-865

STANDARD TRAVERSE

Size .....inches	½	¾	1	1¼	1½	2	2½	3
Traverse.....inches	2	2¼	2¼	2¼	2¼	2½	2½	2¾
Each.....	1.50	2.20	2.75	4.00	5.00	8.00	17.50	24.00

SPECIAL TRAVERSE (No. H-866)

Traverse	Size .....inches	¾	1	1¼	1½	2	2½
4 inches.....	Each	4.00	4.90	6.30	7.40	9.10	.....
6 "	"	8.25	9.00	10.00	11.50	13.00	24.00
8 "	"	9.00	10.00	11.25	13.00	15.50	27.00
10 "	"	9.75	11.00	12.50	14.50	17.50	30.00
12 "	"	10.50	12.00	13.75	16.00	19.50	33.00

Under ordinary steam service conditions an allowance of about 1 inch in 50 feet of pipe should be made for expansion.

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STANDARD JENKINS DISC BRASS GLOBE AND ANGLE VALVES

Jenkins or Soft Copper Disc

Fig. H-866
Globe

Fig. H-867
Angle

"High-Duty-Metal"

With Jenkins Composition Disc Suitable for Steam Working Pressures up to 100 Pounds

With Soft Copper Disc Suitable for Steam Working Pressures up to 200 Pounds

Size.....inches	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Fig. H-866, 867, Screwed .each	1.10	1.25	1.60	2.20	2.80	4.00	5.50	8.75	15.75	22.00
No. H-868, Flanged..... "	....	....	....	....	6.00	9.00	11.00	16.50	25.00	34.00
Diam. of Flanges (Regular).....inches	....	....	....	....	4	4½	5	6	7	7½
Diam. of Flanges (Special)..... "	....	....	....	....	4½	5	6	6½	7½	8¼
Face to Face, Flanged, Globe..... "	....	....	....	....	4¼	4¾	5¼	6	6¾	8
Center to Face, Flanged, Angle... "	....	....	....	....	2½	3¼	3¾	4	4¾	5½
Copper or Composition Discs.....each	.06	.08	.08	.10	.12	.18	.24	.36	.48	.66

Templates for drilling regular flanges, page 196.
Templates for drilling special flanges, pages 224, 225.
Price list for drilling regular flanges, page 415.
Price list for drilling special flanges, page 430.
For specific merits of "High-Duty-Metal," see page 295.
Be careful to specify whether globe or angle valves are wanted.
Unless otherwise specified, flanges will be furnished to dimensions marked regular.
These valves are so constructed as to admit of being packed under pressure when wide open
Screwed end valves are furnished unless otherwise specified.
Flanged end valves not carried in stock.
The stuffing box of these valves is so constructed as to prevent the packing and stuffing nut from turning when opening or closing valve.

STANDARD JENKINS DISC BRASS CHECK VALVES

Horizontal and Angle

Size.....inches	¼	⅜	½	¾	1	1¼	1½	2	2½	3
No. H-869, Screwed.....each	1.10	1.20	1.30	1.90	2.60	3.60	5.00	7.50	13.50	21.00
No. H-870, Flanged..... "	....	....	....	....	6.00	8.00	10.00	15.00	23.00	32.00

These valves have the same general dimensions and are suitable for the same working pressure as the globe and angle valves.

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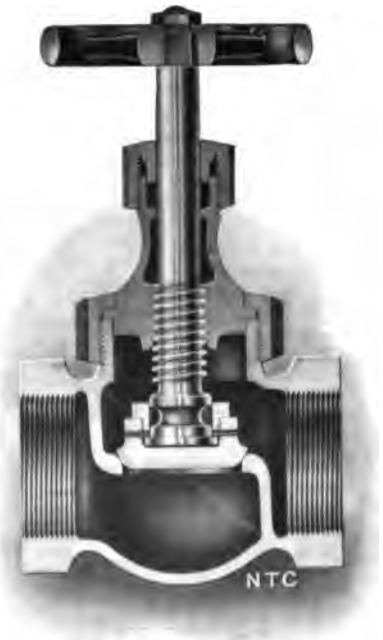
STANDARD REGRINDING BRASS GLOBE AND ANGLE VALVE

"High-Duty-Metal." Union Bonnet
Suitable for Steam Working Pressures up to 175 Pounds

Fig. H 873



SECTIONAL VIEW

These valves are compactly designed and well proportioned, the result being a line of valves that is pleasing to the eye as well as strong and durable. The well-known convex seat and disc used in these valves insures a tight seal.

The stuffing boxes in all sizes are equipped with a gland, and each valve is so constructed as to admit of being packed under pressure when wide open.

For specific merits of "High-Duty-Metal," see page 295.

TO REGRIND ONE OF THESE VALVES

Remove the trimmings from the body and insert a piece of wire in the small hole through the top of the disc, thus locking the disc to the stem. Place a little emery dust and oil on the face of the disc, replace the trimmings in the body, and screw the union ring on to the body about one turn; then regrind the seat by rotating the disc against it until the bearing is perfect. This operation may be performed without removing the valve from the line.

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STANDARD REGRINDING BRASS GLOBE AND ANGLE VALVES

"High-Duty-Metal." Union Bonnet

Suitable for Steam Working Pressures up to 175 Pounds

Fig. H-874

Fig. H-875

SCREWED GLOBE AND ANGLE VALVES

Size .....inches	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Figs. H-874, H-875 .....each	1.30	1.50	1.90	2.50	3.50	5.00	7.00	11.00	20.00	29.00
No. H-876, with Rough Brass Wheel "	1.65	1.85	2.40	3.25	4.40	6.30	8.65	13.00	23.50	33.50
" H-877, " Finished " " "	1.90	2.10	2.80	3.65	4.90	6.65	9.00	13.85	25.00	35.50
" H-878, Finished all over with Finished Brass Wheel.... "	3.30	3.65	4.15	5.25	6.25	9.00	12 50	18.50	36.50	57 25

FLANGED GLOBE AND ANGLE

Size .....inches	1	1¼	1½	2	2½	3
Nos. H-879, H-880..... each	8.00	11.00	14.00	20.00	33 00	48.00
Diameter of Flanges (Regular).....inches	4	4½	5	6	7	7½
Diameter of Flanges (Special)..... "	4½	5	6	6½	7½	8¼
Face to Face, Globe..... "	4¼	4¾	5¼	6	6¾	8
Center to Face, Angle.. ..... "	2⅞	3¼	3¾	4	4¾	5½

Templates for drilling regular flanges, page 196.
Templates for drilling special flanges, pages 224, 225.
Price list for drilling regular flanges, page 413.
Price list for drilling special flanges, page 430.
Screwed end valves furnished unless otherwise specified.
Flanged end valves not carried in stock.
For specific merits of "High-Duty-Metal," see page 225.
All sizes of these valves have stuffing box glands.
For sectional view and directions regarding regrinding, see opposite page.
Be careful to specify whether globe or angle valves are wanted.
Unless otherwise specified, flanges will be furnished to dimensions marked regular.
These valves are so constructed as to admit of being packed under pressure when wide open.

STANDARD REGRINDING BRASS CHECK VALVES

"High-Duty-Metal." Union Bonnet

Suitable for Steam Working Pressures up to 175 Pounds

Fig. H-881
Horizontal

SCREWED, HORIZONTAL OR ANGLE

Size .....inches	¼	⅜	½	¾	1
Fig. H-881, No. H-882.....each	1.15	1.35	1.70	2.25	3.15
Size .....inches	1¼	1½	2	2½	3
Fig. H-881, No. H-882.....each	4.50	6.30	9.90	18.00	26.00

FLANGED, HORIZONTAL OR ANGLE

Size.....inches	1	1¼	1½	2	2½	3
No. H-883, No. H-884.....each	7.00	10.00	13.00	18.00	30.00	43.00
Diameter of Flanges (Regular).inches	4	4½	5	6	7	7½
Diameter of Flanges (Special) "	4½	5	6	6½	7½	8¼
Face to Face, Horizontal..... "	4¼	4¾	5¼	6	6¾	8
Center to Face, Angle..... "	2⅞	3¼	3¾	4	4¾	5½

Templates for drilling regular flanges, page 196.
Templates for drilling special flanges, pages 224, 225.
Price list for drilling regular flanges, page 413.
Price list for drilling special flanges, page 430.
For specific merits of "High-Duty-Metal," see page 295.
Screwed end valves furnished unless otherwise specified.
Flanged end valves not carried in stock.
Unless otherwise specified, flanges will be furnished to dimensions marked regular.

To regrind these valves: Unscrew the cap, take disc from body and put a little emery dust and oil on its working face. Then replace disc and regrind by rotating it against the seat until bearing is perfect.

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STANDARD BRASS GATE VALVES

Steam Metal. Double Disc Pattern

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-885

These valves are of the double disc parallel seat type, and are so constructed that the discs do not bear on the seats in opening or closing.

The discs are hung substantially on the stem, and are seated by a wedge which bears on the centers of the discs. This wedge is brought into action by a lug on the bottom of the valve body just before the discs reach their lowest position. It is likewise released at the very instant of starting to open the valve. Consequently, the discs are free from the seats during the entire process of opening and closing.

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STANDARD BRASS GATE VALVES

Steam Metal. Double Disc Pattern

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-886

SCREWED

Size.....inches	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Fig. H-886 .....each	1.25	1.25	1.30	1.75	2.50	3.50	5.00	7.50	14.00	20.00

FLANGED—Not Illustrated

Size.....inches	1	1¼	1½	2	2½	3
No. H-887.....each	7.50	9.00	12.00	14.00	24.00	34.00
Diameter of Flanges .....inches	4	4½	5	6	7	7½
Face to Face..... "	3 5/16	3¾	4 1/16	4 15/16	5 5/8	6

Screwed end valves will be furnished unless otherwise specified.
Flanged Valves are not carried in stock. For sectional view, see page 287.
Templates for drilling, see page 196. Price list for drilling, see page 413.

STANDARD BRASS GATE VALVES

Steam Metal. Double Disc Pattern

Suitable for Steam Working Pressures up to 125 Pounds

For Illustration see opposite page

WOOD WHEEL

Size.....inches	½	¾	1	1¼	1½	2
No. H-888, Rough Body, Plain.....each	1.70	2.25	3.05	4.25	5.85	9.05
No. H-889, R. B. Plated all Over..... "	2.00	2.60	3.45	4.70	6.35	9.80
No. H-890, Finished all Over..... "	2.65	3.25	4.50	6.00	7.50	12.00
No. H-891, Finished and Plated all Over.. "	2.95	3.60	4.90	6.45	8.00	12.75

WOOD WHEEL WITH UNION

Size.....inches	½	¾	1	1¼	1½	2
No. H-892, Rough Body, Plain..each	2.75	3.35	4.20	5.50	7.25	11.35
No. H-893, R. B., Plated all Over..... "	3.10	3.75	4.65	6.10	7.85	12.10

FINISHED BRASS WHEEL

Size.....inches	½	¾	1	1¼	1½	2	2½	3
No. H-894, Rough Body, Plain.....each	2.70	3.25	4.05	5.50	7.10	10.30	18.00	25.00
No. H-895, Finished all Over..... "	3.65	4.25	5.50	7.25	8.75	13.25	22.00	30.00
No. H-896, Finished and Plated all Over. "	3.95	4.60	5.90	7.70	9.25	14.00	23.00	31.50

These Valves are made to order only.

Can be furnished with lock and shield when so ordered, at a special price.

For interior construction, see page 287.

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SPECIAL BRASS GATE VALVES

Double Disc Pattern. Special Differential Stem Thread

Steam Metal

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-897

SECTIONAL VIEW

These valves are of the double disc parallel seat type; the construction however differs somewhat from the valve shown in section on page 287.

It will be noted that the stem has a special differential thread. This construction reduces the number of turns necessary to open the valve.

By a careful distribution of the metal great strength is obtained; this is especially noticeable in the hub and its junction with the body.

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SPECIAL BRASS GATE VALVE

Double Disc Pattern. Special Differential Stem Thread

Steam Metal

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-898

SCREWED

Size.....inches	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Fig. H-898.....each	1.25	1.25	1.30	1.75	2.50	3.50	5.00	7.50	14.00	20.00

FLANGED — Not Illustrated

Size.....inches	1	1¼	1½	2	2½	3
No. H-899.....each	7.50	9.00	12.00	14.00	24.00	34.00
Diameter of Flanges.....inches	4	4½	5	6	7	7½
Face to Face..... "	3 5/16	3 3/4	4 1/16	4 15/16	5 5/8	6

Templates for drilling, page 196.
Price list for drilling, page 413.
For sectional view see page 290.
Flanged valves are not carried in stock.
Screwed valves will be furnished unless otherwise specified.

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STANDARD QUICK OPENING BRASS GATE VALVES

Double Disc Pattern. Sliding Stem and Lever

Steam Metal

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-900

SCREWED

Size.....inches	½	¾	1	1¼	1½	2	2½	3
Fig. H-900.....Each	3.00	3.25	4.50	6.00	8.00	12.00	22.00	30.00

FLANGED

Size.....inches	1	1¼	1½	2	2½	3
No. H-901.....each	10.50	12.00	14.75	18.50	32.00	45.00
Diameter of Flanges.....inches	4	4½	5	6	7	7½
Face to Face..... "	3 5/16	3 3/4	4 1/16	4 13/16	5 5/8	6

Templates for drilling, page 196.
Price list for drilling, page 413.
Flanged valves not carried in stock.
Screwed valves will be furnished unless otherwise specified.
The construction of these valves is such that the discs can be locked in any desired position.

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STANDARD BRASS HOSE GATE VALVES

Double Disc Pattern. Special Differential Stem Thread

Steam Metal

Suitable for 125 Pounds Working Pressure

Fig. H-902

WITH IRON WHEEL

Size.....inches	1	1¼	1½	2	2½	3
Fig. H-902, With Brass Cap & Chain .	3.75	4.85	6.50	9.25	16.50	23.50
No. H-903, Without Cap and Chain.	2.50	3.50	5.00	7.50	14.00	20.00

WITH FINISHED BRASS WHEEL

Size.....inches	1	1¼	1½	2	2½	3
No. H-904 Finished all over, with Brass Cap and Chain ....each	6.75	8.60	10.25	15.00	24.50	33.50
No. H-905 Finished all over, without Cap and Chain..... "	5.50	7.25	8.75	13.25	22.00	30.00
No. H-906 Finished & Plated all over, with Brass Cap & Chain "	7.35	9.35	11.00	16.00	26.00	35.50
No. H-907 Finished & Plated all over, without Cap & Chain. "	5.90	7.70	9.25	14.00	23.00	31.50

For interior construction, see page 290.

Made to order only. Iron pipe thread female end, hose thread male end.
Sample hose thread required with all orders.

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STANDARD BRASS GATE VALVE WITH AUTOMATIC DRIP

Double Disc Pattern. Special Differential Stem Thread

Steam Metal

Suitable for 125 Pounds Working Pressure

Fig. H-908

Made in two inch only.

Price on application.

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"HIGH-DUTY-METAL"

It is a well-known fact that the copper alloys known as brass and bronze generally suffer a marked reduction in strength with increase of temperature. This loss of strength is not generally taken into account, because the deterioration is slow up to a certain point, and this point is above the temperature of steam or air at the usual pressures. At about the temperature of steam at 150 to 175 pounds pressure, the loss begins to be very rapid, and at about 400° F. there is a sudden marked drop in tenacity. From that point to 500° F. the loss is very rapid and the strength of the material is seriously affected.

In designing our new line of extra heavy and medium pressure brass valves, this company determined to use the metal which would show the smallest percentage of loss in this respect that it was possible to obtain, the same metal to have other qualities which are essential in a valve at all times and particularly in a valve for use under high pressure.

In endeavoring to secure this metal, an effort was made through the secretary of the American Society of Mechanical Engineers to collect all of the existing literature upon the subject, and it was discovered that practically all that has been determined on this question is contained in the results of the experiments of the British Admirality in 1877 as described on page 309 of Kent's Mechanical Engineer's Pocket-Book. Having found that no further light was to be obtained from past researches, this company inaugurated an exhaustive series of tests with a large number of mixtures of copper, tin, zinc and other metals, with the purpose of determining for itself absolutely the best metal for its purpose.

These experiments extended through a period of eight months, and were very thorough and complete. We have discovered a metal which, by reason of its peculiar merits in resisting deterioration incident to the high temperatures of steam at high pressure, we have named "High-Duty-Metal." Valves made from this metal have given excellent results under severe conditions of service and we confidently recommend our "High-Duty-Metal" line of valves to all whose requirements are severe.

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MEDIUM PRESSURE BRASS GLOBE AND ANGLE VALVES

Fig. H-950
Globe

"High-Duty-Metal"

Suitable for Steam Working Pressures up to 175 Pounds

Fig. H-951
Angle

SCREWED GLOBE AND ANGLE VALVES

Size.....inches	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Fig. H-950, H-951 ....each	1.30	1.50	1.90	2.50	3.50	5.00	7.00	11.00	20.00	29.00

FLANGED GLOBE AND ANGLE VALVES

Size.....inches	1	1¼	1½	2	2½	3
Nos. H-592, H-593.....each	8.00	11.00	14.00	20.00	33.00	40.00
Diam. of Flanges (Regular)...inches	4	4½	5	6	7	7½
Diam. of Flanges (Special).... "	4½	5	6	6½	7½	8¼
Face to Face, Globe..... "	4¼	4¾	5¼	6	6¾	8
Center to Face, Angle..... "	2⅞	3¼	3¾	4	4¾	5½

Templates for drilling regular flanges, page 196.
Templates for drilling special flanges, pages 224, 225.
Price list for drilling regular flanges, page 413.
Price list for drilling special flanges, page 430.
Flanged end valves not carried in stock.
Screwed end valves furnished unless otherwise specified.
For specific merits of "High-Duty-Metal," see page 295.
All sizes of valves, ¾ inch to 3 inches inclusive, have stuffing box glands.
Unless otherwise specified, flanges will be furnished to dimensions marked Regular.
These valves are so constructed as to admit of being packed under pressure when wide open.
A special feature of this valve is the convex seat and disc which insures a tight valve.

MEDIUM PRESSURE BRASS GATE VALVES

Fig. H-954

"High-Duty-Metal"
Wedge Gate Pattern

Suitable for Steam Working Pressures up to 175 Pounds

SCREWED

Size ..... inches	¼	⅜	½	¾	1
Fig. H-954 ..... each	1.25	1.25	1.80	2.30	3.00
Size ..... inches	1¼	1½	2	2½	3
Fig. H-954 ..... each	4.20	6.00	9.00	17.00	24.00

FLANGED — Not Illustrated

Size ..... inches	1	1¼	1½	2	2½	3
No. H-955 ..... each	5.90	8.10	11.00	16.00	29.00	39.00
Diameter of Flanges (Regular) . inches	4	4½	5	6	7	7½
" " " (Special) .. "	4½	5	6	6½	7½	8¼
Face to Face .... "	3⅝	4¼	4 11/16	5 9/16	6⅜	7½

Templates for drilling regular flanges, page 196.
Templates for drilling special flanges, pages 224, 225.
Price list for drilling regular flanges, page 413.
Price list for drilling special flanges, page 430.
For specific merits of "High-Duty-Metal," see page 295.
Flanged end valves not carried in stock.
Screwed end valves furnished unless otherwise specified.
All sizes of valves from ¼ inch to 3 inches inclusive have stuffing box glands.
Unless otherwise specified, flanges will be furnished to dimensions marked Regular.
These valves are so constructed as to admit of being packed under pressure when wide open.

MEDIUM PRESSURE BRASS GATE VALVES

With "Kewanee" Union Attachment

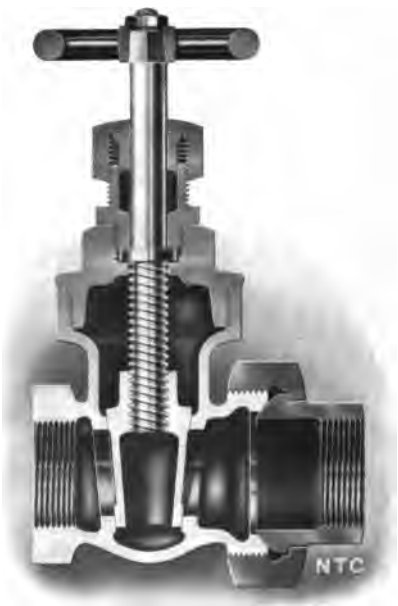
(Patented)

"High-Duty-Metal." Wedge Gate Pattern

Suitable for Steam Working Pressures up to 175 Pounds

Fig. H 956

Gate Valve with Female Union



Size ..... inches	¼	⅜	½	¾	1
Fig. H-956 ..... each	1.25	1.25	1.80	2.30	3.00
Size ..... inches	1¼	1½	2	2½	3
Fig. H-956 ..... each	4.20	6.00	9.00	17.00	24.00

For specific merits of "High-Duty-Metal," see page 295.

All sizes of valves from ½ inch to 3 inches inclusive have stuffing box glands.

Furnished with female union if not otherwise specified. Can furnish with male union, when desired, at same price.

These valves are so constructed as to admit of being packed under pressure when wide open.

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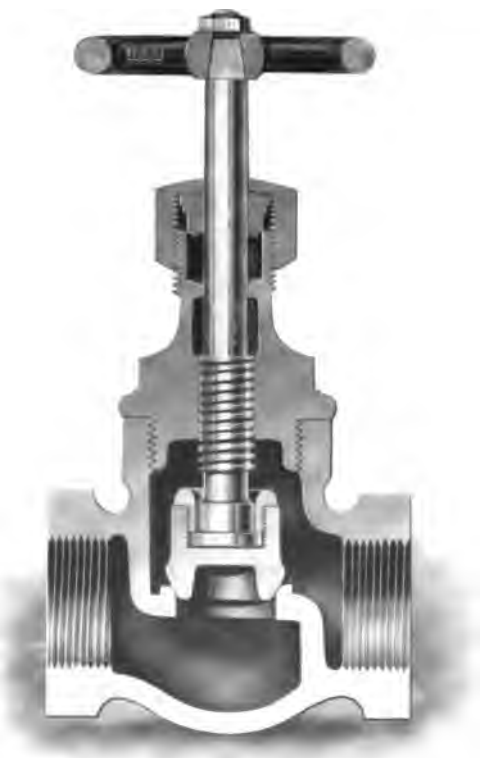
EXTRA HEAVY BRASS GLOBE AND ANGLE VALVES

Convex Seat and Disc or Renewable Copper Disc
"High-Duty-Metal"
Suitable for Steam Working Pressures up to 250 Pounds
Tested to 800 Pounds Cold Water Pressure

Fig. H-957
Globe Valve with Convex Seat and Disc



SECTIONAL VIEW

For price list, see page 300.
All sizes of these valves have stuffing box glands.
For specific merits of "High-Duty-Metal" see page 295.
Convex seat and disc valve will be furnished unless otherwise specified.
Be careful to specify whether globe or angle valves are wanted.
These valves are so constructed as to admit of being packed under pressure when wide open.
A special feature of this valve is the convex seat and discs which insures a tight valve.

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EXTRA HEAVY BRASS GLOBE AND ANGLE VALVES

Fig. H-958
Globe

Fig. H-959
Angle

Convex Seat and Disc or Removable Copper Disc

"High-Duty-Metal"

Suitable for Steam Working Pressures up to 250 Pounds

Tested to 800 Pounds Cold Water Pressure

SCREWED

Size.....inches	½	¾	1	1¼	1½	2	2½	3
Figs. H-958, H-959.....each	3.75	4.25	5.50	7.75	10.00	15.00	27.50	38.50

FLANGED

Size.....inches	1	1¼	1½	2	2½	3
Nos. H-960, H-961.....each	11.00	15.00	21.00	28.00	45.00	68.00
Diameter of Flanges.....inches	4½	5	6	6½	7½	8½
Face to Face, Globe..... "	3 13/16	4 5/16	5 3/16	6 3/16	7 7/16	8 3/16
Center to Face, Angle..... "	2 5/16	3 3/16	3 3/16	4 1/16	4 11/16	5 3/16

EXTRA COPPER DISCS

Size.....inches	½	¾	1	1¼	1½	2	2½	3
Price.....each	.08	.10	.12	.18	.24	.36	.48	.66

Templates for drilling, see pages 224, 225. Price list for drilling, see page 430.
Flanged end valves are not carried in stock.
For specific merits of "High-Duty-Metal," see page 295.
Screwed end valves will be furnished unless otherwise specified.
All sizes of these valves have stuffing box glands.
Unless otherwise specified, the above valves will be furnished with convex seats and discs, as shown in sectional view, page 299.
Be careful to specify whether globe or angle valves are wanted.
These valves are so constructed as to admit of being packed under pressure.

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EXTRA HEAVY BRASS HORIZONTAL AND ANGLE CHECK VALVES

"High-Duty-Metal"

Suitable for Steam Working Pressures up to 250 Pounds

Tested to 800 Pounds Cold Water Pressure

Fig. H-962
Horizontal

Fig. H-963
Angle

Size.....inches	½	¾	1	1¼	1½	2	2½	3
Fig. H-962, H-963, Screwed....	1.75	2.50	3.50	5.00	7.00	11.00	20.00	27.50
Nos. H-964, H-965, Flanged....	....	....	9.00	12.25	18.00	24.00	37.50	57.00

Templates for drilling, pages 224, 225.

Price list for drilling, page 430.

Flanged end valves are not carried in stock.

Screwed end valves furnished unless otherwise specified.

For specific merits of "High-Duty-Metal," see page 295.

The flanged valves have the same size flanges, and face to face dimensions as the globe and angle valves shown on opposite page.

Always specify whether horizontal or angle pattern is wanted.

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EXTRA HEAVY BRASS SWING CHECK VALVES

"High-Duty-Metal"

Suitable for Steam Working Pressures up to 250 Pounds

Tested to 800 Pounds Cold Water Pressure

Fig. H-966

Size .....inches	½	¾	1	1¼	1½	2	2½
Fig. H-966, Screwed.....each	3.25	3.25	4.25	6.00	7.50	12.00	30.00
No. H-967, Flanged ..... "	....	....	11.00	15.00	21.00	28.00	45.00
Diameter of Flanges...inches	....	....	4½	5	6	6½	7½
Face to Face..... "	....	....	3¾	4	4½	5⅛	....

Templates for drilling, pages 224, 225.

Price list for drilling, page 430.

Flanged end valves not carried in stock.

For specific merits of "High-Duty-Metal," see page 295.

Screwed end valves furnished unless otherwise specified

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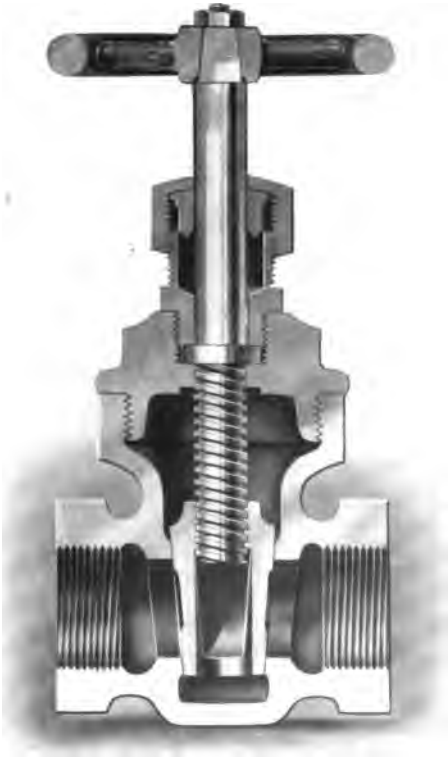
EXTRA HEAVY BRASS GATE VALVES

"High-Duty-Metal." Wedge Gate Pattern

Suitable for Steam Working Pressures up to 250 Pounds

Tested to 800 Pounds Cold Water Pressure

Fig. H 968



SECTIONAL VIEW

For price list, see page 304.
For specific merits of "High-Duty-Metal," see page 295.

All sizes of these valves have stuffing box glands.

These valves are so constructed as to admit of being packed under pressure when wide open.

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EXTRA HEAVY BRASS GATE VALVES

"High-Duty-Metal." Wedge Gate Pattern
Suitable for Steam Working Pressures up to 250 Pounds
Tested to 800 Pounds Cold Water Pressure

Fig. H-969

SCREWED

Size.....inches	½	¾	1	1¼	1½	2	2½	3
Fig. H-969.....each	3.75	4.25	5.50	7.75	10.00	15.00	27.50	38.50

FLANGED

Size.....inches	1	1¼	1½	2	2½	3
No. H-970.....each	11.00	15.00	21.00	28.00	45.00	68.00
Diameter of Flanges.....inches	4½	5	6	6½	7½	8¼
Face to Face..... "	4 3/16	4 9/16	5 5/16	6 3/16	7⅛	8 5/16

Templates for drilling, pages 224, 225.
Price list for drilling, page 430.
For sectional view, see page 303.
For specific merits of "High-Duty-Metal," see page 295.
All sizes of these valves have stuffing box glands.
Screwed end valves furnished unless otherwise specified.
Flanged end valves are not carried in stock.
These valves are so constructed as to admit of being packed under pressure when wide open.

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EXTRA HEAVY HYDRAULIC BRASS GLOBE VALVES

Suitable for Cold Water Working Pressures up to 800 Pounds
Tested to 2000 Pounds Cold Water Pressure

Fig. H-971

Size .....inches	⅜	½	¾	1	1¼	1½	2
Each	6.00	6.00	7.00	9.00	13.00	18.00	25.00

All sizes of these valves have stuffing box gland.

Construction of hand wheel admits of using a bar to tighten valve.

These valves are so constructed as to admit of being packed under pressure when wide open.

The brass used in these valves is a mixture especially adapted for hydraulic work, where the service is unusually severe.

NOTE.—While these valves were designed for 800 pounds working pressure, in sizes 1 inch and smaller, many of them are in use at 1500 pounds pressure, while in the 1¼ inch size a number are being satisfactorily used at 1000 pounds pressure.

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ACID VALVES

In order to meet the demand for a satisfactory line of Acid Valves and Cocks, we offer the line shown on the succeeding pages.

The construction of these Valves and Cocks is unusually heavy, and the metal used is a special mixture which resists the action of concentrated acids. Many of them are in use and have proved very satisfactory.

On account of the widely varying conditions surrounding the use of Acid Valves, both as regards the usage of the valves and the nature of the acid itself, recommendations can hardly be made here covering all cases. In general, however, valves are usually preferable to cocks when frequent operation is necessary. It is desirable that cocks be kept well lubricated in order to insure long life.

Correspondence regarding special conditions is solicited, and we gladly offer the benefit of our experience to our patrons.

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ACID GLOBE AND ANGLE VALVES

Acid Metal. Heavy Pattern

Screwed or Flanged

Fig. H-980

These valves have renewable discs, and are made in all regular sizes from ¼ inch to 3 inches inclusive.

Prices will be furnished on application.

Be careful to specify whether globe or angle valves are wanted.

Screwed end valves will be furnished unless otherwise specified.

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ACID GATE VALVES

Acid Metal. Heavy Pattern

Screwed or Flanged

Fig. H-981

These valves are made in all regular sizes from ⅜ inch to 3 inches inclusive.

Prices will be furnished on application.

Screwed end valves will be furnished unless otherwise specified.

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ACID COCKS

Acid Metal. Heavy Pattern

Screwed or Flanged

Fig. H 982

These cocks are made in all regular sizes from ¼ inch to 3 inches inclusive
Prices will be furnished on application.
Screwed end cocks will be furnished unless otherwise specified.

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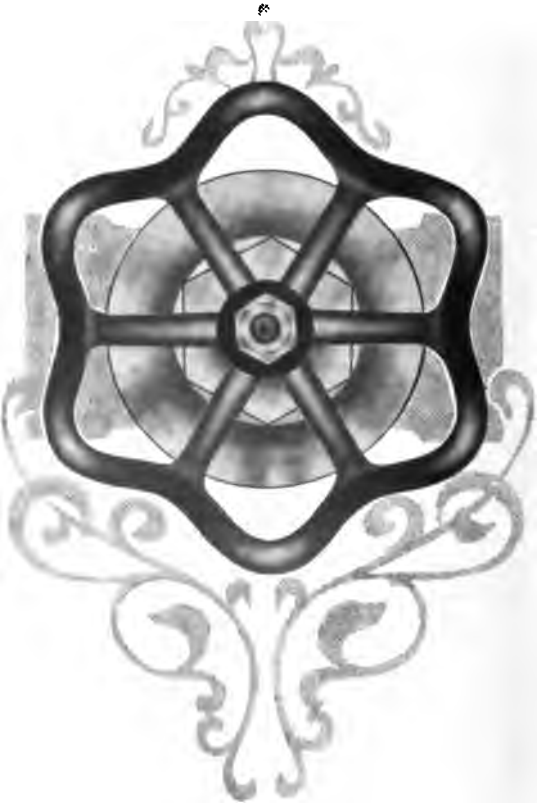

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RADIATOR VALVES

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RADIATOR VALVES

Brass Discs. Wood Wheels

Without Union

Fig. H-1000

Threads: Female left-hand on side, female right-hand on bottom.

No.	Size.....inches	½	¾	1	1¼	1½	2
6	Rough Body, Finished Trimmings. each	1.35	1.60	2.25	3.25	4.50	7.00
7	Rough Body, Plated Trimmings... "	1.55	1.85	2.40	3.60	4.85	7.25
8	Rough Body, Plated All Over..... "	1.65	1.95	2.65	3.70	5.00	7.75
9	Finished All Over..... "	1.85	2.15	2.85	4.00	5.50	8.50
10	Finished and Plated All Over..... "	2.15	2.50	3.25	4.45	6.00	9.25

In ordering, always use valve numbers and sizes.

Valves fitted with lock and shield at same list; keys extra.

These valves are suitable for use with low pressure steam.

We shall fill orders for this style radiator valve tapped as above, unless otherwise specified, and shall invariably refuse to allow the return of such as may be incorrectly ordered.

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RADIATOR VALVES

Brass Discs. Wood Wheels

With Union

Fig. H-1001

Threads: Male right-hand on Union, Female right-hand on bottom.

No.	Size .....inches	½	¾	1	1¼	1½	2
11	Rough Body, Finished Trimmings..	2.05	2.45	3.25	4.50	6.50	10.00
12	Rough Body, Plated Trimmings....	2.30	2.60	3.35	4.90	6.65	10.25
13	Rough Body, Plated all Over.....	2.40	2.85	3.65	5.05	7.10	10.85
14	Finished all Over.....	2.55	3.00	3.85	5.25	7.50	11.50
15	Finished and Plated all Over.....	2.90	3.40	4.30	5.80	8.10	12.35

In ordering, always use valve numbers and sizes.

Valves fitted with lock and shield at same list; keys extra.

These valves are suitable for use with low pressure steam.

We shall fill orders for this style radiator valve tapped as above, unless otherwise specified, and shall invariably refuse to allow the return of such as may be incorrectly ordered.

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RADIATOR VALVES

Jenkins Discs. Wood Wheels

Without Union

Fig. H-1002

Threads: Female left-hand on side, Female right-hand on bottom.

No.	Size.....inches	½	¾	1	1¼	1½	2
21	Rough Body, Finished Trimmings..each	2.00	2.50	3.20	4.50	6.25	10.50
22	Rough Body, Plated Trimmings... "	2.25	2.70	3.50	4.75	6.50	10.75
23	Rough Body, Plated All Over..... "	2.50	2.85	3.65	4.90	6.75	11.00
24	Finished All Over..... "	2.65	3.00	3.75	5.25	7.25	11.75
25	Finished and Plated All Over..... "	2.85	3.10	4.00	5.40	7.75	12.25

In ordering, always use valve numbers and sizes.

Valves fitted with lock and shield at same list; keys extra.

These valves are suitable for use with low pressure steam.

We shall fill orders for this style radiator valve tapped as above, unless otherwise specified, and shall invariably refuse to allow the return of such as may be incorrectly ordered.

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RADIATOR VALVES

Jenkins Discs. Wood Wheels

With Union

Fig. H-1003

Threads: Male right-hand on Union, Female right-hand on bottom.

No.	Size .....inches	½	¾	1	1¼	1½	2
26	Rough Body, Finished Trimmings..	2.75	3.50	4.30	5.85	7.75	12.60
27	Rough Body, Plated Trimmings....	3.00	3.75	4.65	6.25	8.00	12.85
28	Rough Body, Plated all Over.....	3.05	3.80	4.75	6.40	8.10	13.10
29	Finished all Over.....	3.25	4.00	4.80	6.40	8.75	13.85
30	Finished and Plated all Over.....	3.50	4.25	5.25	7.00	9.25	14.35

In ordering, always use valve numbers and sizes.

Valves fitted with lock and shield at same list; keys extra.

These valves are suitable for use with low pressure steam.

We shall fill orders for this style radiator valve tapped as above, unless otherwise specified, and shall invariably refuse to allow the return of such as may be incorrectly ordered.

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SPECIAL RADIATOR VALVES

Brass Discs. Wood Wheels

Without Union

Fig. H-1004

Threads: Female left-hand on side, female right-hand on bottom.

No.	Size.....inches	½	¾	1	1¼	1½	2
06	Rough Body, Finished Trimmings....	1.35	1.60	2.25	3.25	4.50	7.00
07	Rough Body, Plated Trimmings.....	1.55	1.85	2.40	3.60	4.85	7.25
08	Rough Body, Plated All Over.....	1.65	1.95	2.65	3.70	5.00	7.75
09	Finished All Over.....	1.85	2.15	2.85	4.00	5.50	8.50
010	Finished and Plated All Over.....	2.15	2.50	3.25	4.45	6.00	9.25

In ordering, always use valve numbers and sizes.

Valves fitted with lock and shield at same list: keys extra.

These valves are heavier than our regular pattern radiator valves and are suitable for use where requirements are more exacting.

We shall fill orders for this style radiator valve tapped as above, unless otherwise specified, and shall invariably refuse to allow the return of such as may be incorrectly ordered.

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SPECIAL RADIATOR VALVES

Brass Discs. Wood Wheels

With Union

Fig. H-1005

Threads: Male right-hand on Union, female right-hand on bottom.

No.	Size.....inches	½	¾	1	1¼	1½	2
011	Rough Body, Finished Trimmings..each	2.05	2.45	3.25	4.50	6.50	10.00
012	Rough Body, Plated Trimmings... "	2.30	2.60	3.35	4.90	6.65	10.25
013	Rough Body, Plated All Over..... "	2.40	2.85	3.65	5.05	7.10	10.85
014	Finished All Over..... "	2.55	3.00	3.85	5.25	7.50	11.50
015	Finished and Plated All Over..... "	2.90	3.40	4.30	5.80	8.10	12.35

In ordering, always use valve numbers and sizes.

Valves fitted with lock and shield at same list; keys extra.

These valves are heavier than our regular pattern radiator valves and are suitable for use where the requirements are more exacting.

We shall fill orders for this style radiator valve tapped as above, unless otherwise specified, and shall invariably refuse to allow the return of such as may be incorrectly ordered.

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SPECIAL RADIATOR VALVES

Jenkins Discs. Wood Wheels

Without Union

Fig. H-1006

Threads: Female left-hand on side, female right-hand on bottom.

No.	Size.....inches	½	¾	1	1¼	1½	2
021	Rough Body, Finished Trimmings..each	2.00	2.50	3.20	4.50	6.25	10.50
022	Rough Body, Plated Trimmings... "	2.25	2.70	3.50	4.75	6.50	10.75
023	Rough Body, Plated All Over..... "	2.50	2.85	3.65	4.90	6.75	11.00
024	Finished All Over..... "	2.65	3.00	3.75	5.25	7.25	11.75
025	Finished and Plated All Over..... "	2.85	3.10	4.00	5.40	7.75	12.25

In ordering, always use valve numbers and sizes.

Valves fitted with lock and shield at same list; keys extra.

We shall fill orders for this style radiator valve tapped as above, unless otherwise specified, and shall invariably refuse to allow the return of such as may be incorrectly ordered.

These valves are heavier than our regular pattern radiator valves, and are suitable for use where the requirements are more exactly.

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SPECIAL RADIATOR VALVES

Jenkins Discs. Wood Wheels

With Union

Fig. H-1007

Threads: Male right-hand on Union, female right-hand on bottom.

No.	Size.....inches	½	¾	1	1¼	1½	2
026	Rough Body, Finished Trimmings	2.75	3.50	4.30	5.85	7.75	12.60
027	Rough Body, Plated Trimmings..	3.00	3.75	4.65	6.25	8.00	12.85
028	Rough Body, Plated All Over....	3.05	3.80	4.75	6.40	8.10	13.10
029	Finished All Over.....	3.25	4.00	4.80	6.40	8.75	13.85
030	Finished and Plated All Over....	3.50	4.25	5.25	7.00	9.25	14.35

In ordering, always use valve numbers and sizes.

Valves fitted with lock and shield at same list; keys extra.

These valves are heavier than our regular valves, and are suitable for use where the requirements are more exacting.

We shall fill orders for this style radiator valve tapped as above, unless otherwise specified, and shall invariably refuse to allow the return of such as may be incorrectly ordered.

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SPECIAL RADIATOR VALVES

Jenkins Discs. Wood Wheels

With "Kewanee" Union

(Patented)

Fig. H-1011

Threads: Male right-hand on Union, female right-hand on bottom.

Size .....inches	½	¾	1	1¼	1½	2
No. H-1008, Rough Body, Finished Trimmings.....	2.75	3.50	4.30	5.85	7.75	12.60
No. H-1009, Rough Body, Plated Trimmings.....	3.00	3.75	4.65	6.25	8.00	12.85
No. H-1010, Rough Body, Plated All Over.....	3.05	3.80	4.75	6.40	8.10	13.10
Fig. H-1011, Finished All Over.....	3.25	4.00	4.80	6.40	8.75	13.85
No. H-1012, Finished and Plated All Over.....	3.50	4.25	5.25	7.00	9.25	14.35

In ordering, always use valve numbers and sizes.

Valves fitted with lock and shield at same list; keys extra.

These valves are heavier than our regular pattern radiator valves, and are suitable for use where the requirements are more exacting.

We shall fill orders for this style radiator valve tapped as above, unless otherwise specified, and shall invariably refuse to allow the return of such as may be incorrectly ordered.

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RADIATOR VALVES

Brass or Jenkins Discs

With Lock and Shield

Fig. H-1013
Special with Union

Fig. H-1014
Key No. 1

Fig. H-1015
Regular with Union

Any of our radiator valves can be furnished with lock and shield. List price is the same as with wood wheel.

When ordering, specify style of valve wanted by number, adding the words "lock and shield."

KEYS FOR LOCK AND SHIELD VALVES

	Plain	Plated
No. 1, Fig. H-1014, for valves ½ to 2 inches, inclusive	.50	.70

When ordering keys, please specify valve for which key is desired. Give Fig. No. of valve.

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RADIATOR VALVES—CORNER

Jenkins Disc. Wood Wheels

Fig. H-1016
Right Hand Valve, Without Union

Fig. H-1017
Left Hand Valve, With Union

WITHOUT UNION

No.	Size..... inches	¾	1	1¼	1½	2
31	Rough Body, Finished Trimmings..	2.75	3.50	5.00	7.00	11.55
32	Rough Body, Plated Trimmings....	3.00	3.85	5.25	7.25	11.85
33	Rough Body, Plated All Over	3.15	4.00	5.50	7.50	12.10
34	Finished All Over.....	3.40	4.25	5.75	8.00	13.05
35	Finished and Plated All Over.....	3.80	4.75	6.25	8 50	13.60

WITH UNION

No.	Size..... inches	¾	1	1¼	1½	2
36	Rough Body, Finished Trimmings..	3.85	4.75	6.45	8.55	13.85
37	Rough Body, Plated Trimmings....	4.15	5.15	6.90	8.80	14.15
38	Rough Body, Plated All Over.....	4.20	5.25	7.05	8.95	14.45
39	Finished All Over.....	4.50	5.50	7.20	9.55	15.35
40	Finished and Plated All Over.....	4.85	6.00	7.80	9.95	15.95

Valves fitted with lock and shield at same list; keys extra.

We shall invariably refuse to allow the return of such valves as may be incorrectly ordered.

Corner valves without unions are tapped right hand bottom, left hand side. On corner valves with unions both openings have right hand threads.

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RADIATOR VALVES — HOT WATER

Quick Opening. Quarter Turn

Fig. H-1027

WITHOUT UNION

Size .....inches	¾	1	1¼	1½	2
No. H-1018, Rough Body, Finished Trim'gs	1.60	2.25	3.25	4.50	7.00
No. H-1019, Rough Body, Plated Trimmings	1.85	2.40	3.60	4.85	7.25
No. H-1020, Rough Body, Plated All Over..	1.95	2.65	3.70	5.00	7.75
No. H-1021, Finished All Over.....	2.15	2.85	4.00	5.50	8.50
No. H-1022, Finished and Plated All Over..	2.50	3.25	4.45	6.00	9.25

WITH UNION

Size .....inches	¾	1	1¼	1½	2
No. H-1023, Rough Body, Finished Trim'gs	2.45	3.25	4.50	6.50	10.00
No. H-1024, Rough Body, Plated Trimmings	2.60	3.35	4.90	6.65	10.25
No. H-1025, Rough Body, Plated All Over..	2.85	3.65	5.05	7.10	10.85
No. H-1026, Finished All Over.....	3.00	3.85	5.25	7.50	11.50
Fig. H-1027, Finished and Plated All Over.	3.40	4.30	5.80	8.10	12.35

Where valves without union are desired, they will be furnished tapped right hand bottom and left hand side, unless otherwise specified.

Valves with unions will be furnished with right hand threads both bottom and side. We shall invariably refuse to allow the return of such valves as may be incorrectly ordered.

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RADIATOR GATE VALVE

With "Kewanee" Union

(Patented)

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-1033

Threads: Male right hand on Union, female right hand on opposite end.

FEMALE BOTH ENDS—NO UNION

Size.....inches	½	¾	1	1¼	1½	2
No. H-1028, Rough Body, Plain.....each	1.70	2.25	3.05	4.25	5.85	9.05
No. H-1029, Rough Body, Plated all Over "	2.00	2.60	3.45	4.70	6.35	9.80
No. H 1030, Finished all Over..... "	2.65	3.25	4.50	6.00	7.50	12.00
No. H-1031, Finished and Plated all Over "	2.95	3.60	4.90	6.45	8.00	12.75

WITH "KEWANEE" MALE UNION

Size.....inches	½	¾	1	1¼	1½	2
No. H-1032, Rough Body, Plain.....each	2.15	2.80	3.75	5.10	7.10	10.65
Fig. H-1033, Rough Body, Plated all Over Except Union... "	2.45	3.15	4.15	5.55	7.60	11.40

Can furnish these valves also with lock and shield when desired, at same lists. Keys extra.

We shall fill orders for this style radiator valve tapped as above, unless otherwise specified, and shall invariably refuse to allow the return of such as may be incorrectly ordered.

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BRASS UNION ELBOWS

For Radiator Connections

Fig. H-1034

No.	Size.....inches	½	¾	1	1¼	1½	2
1	Rough Body, Plain.....each	1.50	1.75	2.25	2.95	3.70	6.00
2	Rough Body, Plated Trimmings ..... "	1.65	1.90	2.40	3.10	3.85	6.15
3	Rough Body, Plated..... "	1.75	2.00	2.50	3.20	4.00	7.00
4	Finished All Over..... "	1.90	2.20	2.75	3.60	4.60	7.50
5	Finished and Plated All Over..... "	2.15	2.40	3.00	3.90	4.85	8.50

Order by number.

The above elbow can be furnished with "Kewanee" union when desired.

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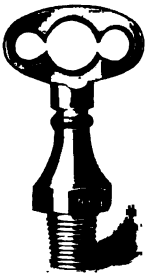
RADIATOR AIR VALVES—COMPRESSION

Fig. H-1035



No. 1

Fig. H-1036

No. 2

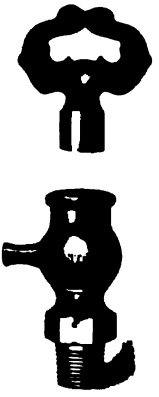
Fig. H-1037

No. 3

Fig. H 1038

No. 4

Fig. H-1039



No. 5

Chased Iron Pipe	Plain	Plated
Size.....inches	⅛	⅛
No. 1, All Brass.....each	.30	.35
No. 2, Wood Wheel ..... "	.40	.45
No. 3, Wood Wheel with Nose..... "	.65	.70
No. 4, Lock and Shield..... "	.30	.35
No. 5, Lock and Shield with Nose..... "	.50	.57

Keys for No. 4, extra; plain, each, net, 4 cents; plated, each, net, 6 cents.

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BRASS COCKS
AND
FITTINGS

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BRASS COCKS

The line of Brass Cocks shown on the succeeding pages, consisting of steam and gas cocks of various types, is quite extensive and should meet almost all requirements.

We should like to call particular attention to the "Kewanee" principle applied to Brass Cocks, as illustrated on page 336. The non-corrosive joint, together with the spherical connection feature, making a secure joint even when the pipe is out of line, are of great service. This construction obviates the use of the gasket and one nipple, and also saves considerable labor in connecting up.

EXTRA HEAVY COCKS

For general service we would especially recommend our line of Extra Heavy Cocks for all pressures up to and including 250 pounds.

The generous proportions of the plug afford ample bearing to insure a tight and serviceable joint, while the substantial construction insures freedom from springing.

All parts are made of "High-Duty-Metal," which is a metal with unusual wearing qualities and peculiarly adapted to use with high-pressure steam.

All cocks are thoroughly tested before being placed in stock.

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STANDARD BRASS STEAM COCKS

Steam Metal

Fig. H-1100
T Handle

Size ..... inches	1/8	1/4	3/8
Fig. H-1100 ..... each	.85	.85	1.00
No. H-1101, With Check ..... "	1.00	1.00	1.15

Fig. H-1102
Flat Head

Fig. H-1103
Square Head

Size ..... inches	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Fig. H-1102, Fig. H-1103 ... each	.85	1.00	1.25	1.70	2.35	3.70	4.85	7.30	14.50	22.50
No. H-1104, With Check .... "	1.00	1.15	1.40	1.90	2.55	3.95	5.15	7.65	15.00	23.25

For all brass special spring plug cock, see page 365.
Square head steam cocks will be furnished unless otherwise specified.

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SPECIAL PATTERN BRASS STEAM COCKS

Steam Metal

Fig. H-1105
Flat Head

Fig. H-1106
Square Head

Size ..... inches	¼	⅜	½	¾	1
Figs. H-1105, H-1106 ..... each	1.30	1.50	2.00	2.85	4.00
Size ..... inches	1¼	1½	2	2½	3
Figs. H-1105, H-1106 ..... each	6.75	8.50	13.50	25.00	37.00

For all brass special spring plug cock, see page 365.

Square head steam cocks will be furnished unless otherwise ordered.

These cocks are somewhat heavier than the standard brass cocks shown on page 329, and are suitable for use where the service is more severe.

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STANDARD BRASS MALE AND FEMALE COCKS

Steam Metal. Square or Flat Heads

Fig. H-1107
Flat Head

Size.....inches	½	¾	1	1¼	1½	2
Each.....	2.00	2.50	3.00	5.35	6.75	9.85

Square head steam cocks will be furnished unless otherwise specified.

BRASS THREE-WAY COCKS

Steam Metal. With Check

Fig. H-1108
Square Head

Size.....inches	½	¾	1	1¼	1½	2	2½	3
Each.....	2.50	3.00	3.75	5.75	7.15	11.00	18.75	26.00

For all brass special spring plug cocks, see page 365.

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EXTRA HEAVY BRASS COCKS

"High-Duty-Metal"

Suitable for Steam Working Pressures up to 250 Pounds

Fig. H-1109
Flat Head

Fig. H-1110
Square Head

Size ..... inches	⅜	½	¾	1	1¼	1½
Figs. H-1109, H-1110 ..... each	1.75	1.75	2.40	3.60	6.00	7.75
Size ..... inches	2	2½	3	3½	4	....
Figs. H-1109, H-1110 ..... each	11.50	23.00	35.00	50.00	65.00	....

For all brass special spring plug cocks, see page 365.

Furnished with square head unless otherwise specified.

The compact construction of these cocks gives great strength without unnecessary weight.

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STANDARD GAS SERVICE COCKS

Fig. H-1111
Tee Handle

Size ..... inches	¼	⅜	½	¾
Fig. H-1111 ..... each	.75	.85	.95	1.15
No H-1112, with Check ..... "	.90	1.00	1.10	1.35

Fig. H-1113
Flat Head

Fig. H-1114
Square Head

Size ..... inches	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Figs. H-1113, H-1114 .each	.75	.85	.95	1.15	1.50	2.25	3.10	5.00	11.00	16.00
No. H-1115, with Check ..... "	.90	1.00	1.10	1.35	1.70	2.50	3.40	5.30	....	....

Flat head service cocks will be furnished unless otherwise specified.

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HEAVY PATTERN GAS SERVICE COCKS

Fig. H-1116
Flat Head

Fig. H-1117
Square Head

Size..... inches	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Each	.85	.95	1.05	1.30	1.70	2.60	3.60	6.50	12.00	18.00

SPECIAL HEAVY PATTERN GAS SERVICE COCKS

Fig. H-1118

Size..... inches	½	¾	1	1¼	1½	2
Fig. H-1118 ..... each	1.05	1.30	1.70	2.60	3.60	6.50
No. H-1119, With Check..... "	1.45	1.75	2.50	3.25	4.75	7.50

Flat head gas cocks will be furnished unless otherwise ordered. Exception is made to this, however, in the case of Pacific Coast points, where square head gas cocks are furnished.

The heavy pattern and special heavy pattern of gas service cocks are, as their names imply, somewhat heavier than the standard gas service cocks shown on page 333. They are consequently suitable for use where requirements are more exacting.

BAR PATTERN GAS SERVICE COCKS

Single or Double

Fig. H-1120
Standard Double Bar

Fig. H-1121
Heavy Pattern Single Bar

Size.....inches	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Fig. H-1120, Standard.....each	.75	.85	.95	1.15	1.50	2.25	3.10	5.00	11.00	16.00
Fig. H-1121, Heavy Pattern... "	.85	.95	1.05	1.30	1.70	2.60	3.60	6.50	....	....
No. H-1122, Special Heavy.... "	....	....	1.05	1.30	1.70	2.60	3.60	6.50	....	....

Bar pattern gas service cocks are furnished as follows:
Standard, with double bar.
Heavy pattern, with single bar.
Special heavy pattern, with double bar.

STANDARD MALE AND FEMALE GAS SERVICE COCKS

Fig. H-1123

Size.....inches	¼	⅜	½	¾	1	1¼	1½	2
Each.....	1.00	1.00	1.30	1.40	1.95	3.00	4.25	6.00

Flat head gas cocks will be furnished unless otherwise specified.

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"KEWANEE" UNION GAS SERVICE COCKS

Fig. H-1124

Size .....inches	½	¾	1	1¼	1½	2
Each	1.40	1.55	2.20	3.40	5.00	7.00

Will be furnished with male union and with flat head unless otherwise specified.

GAS SERVICE COCKS

"Boston Pattern"

Fig. H-1126

Size .....inches	¼	⅜	½	¾	1	1¼	1½	2
Female, No. H-1125.....each	.75	.85	.95	1.15	1.50	2.25	3.10	5.00
With Check, Fig. H-1126... "	.90	1.00	1.10	1.35	1.70	2.50	3.40	5.30
Size .....inches	¼	⅜	½	¾	1	1¼	1½	2
Male & Female, No. H-1127..each	1.00	1.00	1.30	1.40	1.95	3.00	4.25	6.00
With Check, No H-1128.... "	1.15	1.15	1.45	1.60	2.15	3.25	4.55	6.30

Flat head cocks will be furnished unless otherwise specified.

It will be noted that the "Boston Pattern" cock is equipped with lock nut and check.

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GAS METER COCKS

Fig. H 1129

Size.....inches	½	¾	1	1¼	1½	2
Each.....	1.30	1.40	1.95	3.00	4.25	6.00

GAS METER COCKS

With Union

Fig. H-1130

Size.....inches	½	¾	1	1¼	1½	2
Each.....	1.40	1.55	2.20	3.40	5.00	7.00

Flat head meter cocks will be furnished unless otherwise specified.

Meter cocks are made with wipe joint only.

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LOCK GAS SERVICE AND METER COCKS

Fig. H-1131

Fig. H-1132

Size .....inches	½	¾	1	1¼	1½	2
Fig. H-1131, Service Cocks .....each	1.30	1.60	2.10	3.50	5.00	7.00
Fig. H-1132, Meter Cocks ..... "	1.40	1.75	2.30	3.85	5.50	7.75

GAS METER COCKS

With Union and Lock

Fig. H-1133

Round-way and Flat-way

Size .....inches	½	¾	1	1¼	1½	2
No. H-1134, Flat-way .....each	1.50	1.80	2.50	4.00	5.50	8.00
Fig. H-1133, Round-way..... "	2.25	2.70	3.75	6.00	8.25	12.00

Prices do not include lock.
Above cocks are furnished flat head unless otherwise specified.
Meter cocks are made with wipe joint only.

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LOCK SHIELD AIR COCKS

Brass

Suitable for Air Working Pressures up to 100 Pounds

Fig. H-1135

Fig. H-1136

Malleable Wrench for Use with Above Cock

Size ..... inches	1¼
Fig. H-1135 ..... each	2.50
Fig. H-1136, Wrench .. "	.25

This cock is used chiefly on air lines in mines.

One of the special features is that it can not be operated except by wrench. The heads are always made triangular.

For all brass special spring plug cock, see page 365.

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ROUGH STOP COCKS

Threaded for Iron Pipe

Tee Handle

Fig. H-1137
Standard

Fig. H-1138
Check and Waste

Size..... inches	⅜	½	⅝	¾
Fig. H-1137, Straight-way.....per doz.	15.00	17.00	22.00	26.00
Fig. H-1138, Straight-way, Check and Waste "	17.00	19.00	24.00	28.00
No. H 1139, Round-way..... "	.....	21.00	27.00	32.00
No. H-1140, Round-way Check and Waste.. "	.....	23.00	29.00	34.00
Size..... inches	**1**	**1¼**	**1½**	**2**
Fig. H-1137, Straight-way.....per doz.	38.00	60.00	90.00	180.00
Fig. H-1138, Straight-way, Check and Waste "	41.00	64.00	96.00	190.00
No. H-1139, Round-way..... "	54.00	84.00	126.00	250.00
No. H-1140, Round-way, Check and Waste.. "	57.00	88.00	132.00	260.00

Round-way stop cocks are always furnished unless otherwise specified.

Customers are requested to state whether tee handle or lever handle is desired.

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ROUGH STOP COCKS

Threaded for Iron Pipe

Lever Handle

Fig. H-1141
Standard

Fig. H-1142
Check and Waste

Size ..... inches	3/8	1/2	5/8	3/4
Fig. H-1141, Straight-way ..... per doz.	15.00	17.00	22.00	26.00
Fig. H-1142, Straight-way, Check and Waste "	17.00	19.00	24.00	28.00
No. H-1143, Round-way ..... "	.....	21.00	27.00	32.00
No. H-1144, Round-way, Check and Waste.. "	.....	23.00	29.00	34.00

Size ..... inches	1	1 1/4	1 1/2	2
Fig. H-1141, Straight-way ..... per doz.	38.00	60.00	90.00	180.00
Fig. H-1142, Straight-way, Check and Waste "	41.00	64.00	96.00	190.00
No. H-1143, Round-way ..... "	54.00	84.00	126.00	250.00
No. H-1144, Round-way, Check and Waste.. "	57.00	88.00	132.00	260.00

Round-way stop cocks are always furnished unless otherwise specified.

Customers are requested to state whether tee handle or lever handle is desired.

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ROUGH STOP COCKS

Threaded for Iron Pipe

Male and Female

Fig. H-1145
Tee Handle

Fig. H-1148
Lever Handle
Check and Waste

Size ..... inches	3/8	1/2	5/8	3/4
Fig. H-1145, Tee Handle	15.00	17.00	22.00	26.00
No. H-1146, " " Check and Waste	17.00	19.00	24.00	28.00
" H-1147, Lever Handle	....	17.00	22.00	26.00
Fig. H-1148, " " Check and Waste	....	19.00	24.00	28.00

Size ..... inches	1	1¼	1½	2
Fig. H-1145, Tee Handle	38.00	60.00	90.00	180.00
No. H-1146, " " Check and Waste	41.00	64.00	96.00	190.00
" H-1147, Lever Handle	38.00	60.00	90.00	180.00
Fig. H-1148, " " Check and Waste	41.00	64.00	96.00	190.00

Customers are requested to state whether tee handle or lever handle is desired.

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HYDRANT COCKS

Threaded for Iron Pipe

Fig. H-1149

Size ..... inches	½	¾	1	1¼
Fig. H-1149, Straight-way ..... per dozen	21.00	31.50	45.00	69.00
No. H-1150, Round-way..... "	25.00	37.50	61.00	93.00

Round-way Hydrant Cocks are always furnished unless otherwise specified.

BRINE COCKS

Brass. Threaded for Iron Pipe. Lever Handle

Fig. H-1151
Male and Female

Size ..... inches	½	¾	1	1¼
Each	1.35	2.00	3.00	4.50

RAILING FITTINGS — FINISHED BRASS

Malleable Iron Pattern

Fig. H-1152
No. 1

Fig. H-1153
No. 2

Fig. H-1154
No. 3

Fig. H-1155
No. 4

Fig. H-1156
No. 5

Fig. H-1157
No. 6

Fig. H-1158
No. 7

Fig. H-1159
No. 8

Size ..... inches	½	¾	1	1¼	1½	2
No. 1 Elbow ..... each	.60	.70	.80	1.20	1.60	2.50
" 2 Elbow, Side Outlet ..... "	.80	.90	1.10	1.70	2.00	3.00
" 3 Tee ..... "	.80	.90	1.10	1.70	2.00	3.00
" 4 Tee, Side Outlet ..... "	1.20	1.30	1.50	2.00	2.40	3.50
" 5 Cross ..... "	1.20	1.30	1.50	2.00	2.40	3.50
" 6 Cross, Side Outlet ..... "	1.40	1.50	1.70	2.25	3.00	4.00
" 7 Floor Flange ..... "	.30	.40	.55	.75	1.00	1.30
" 8 Acorn Ornament ..... "	1.00	1.50	2.00	2.50	3.25	4.50

In ordering please describe kind wanted by number and size.
Unless otherwise specified all openings will be tapped right hand. An advance of 15% will be charged when fittings are tapped otherwise.
For malleable railing fittings, see Malleable Section.

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BRASS STEAM FITTINGS

Iron Pipe Size

Fig. H-1160
Elbow

Fig. H-1161
45° Elbow

Suitable for Steam Working Pressures up to 125 Pounds

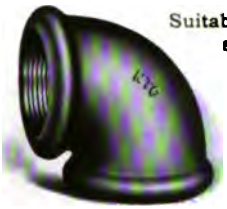


Fig. H-1162
Tee

Fig. H-1163
Cross

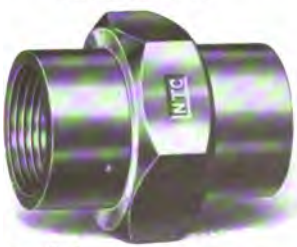
Fig. H-1164
Coupling, R. H.

Fig. H-1165
Coupling, R. and L.

Fig. H-1166
Bushing

Fig. H-1167
Union Rough

Fig. H-1168
Union Finished



Rough brass fittings are furnished unless otherwise specified.
Unless otherwise specified, beaded fittings will be furnished, except where made only in plain, in which case plain will be furnished.

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BRASS STEAM FITTINGS

IRON PIPE SIZE — Rough

Suitable for Steam Working Pressures up to 125 Pounds

Size.....inches	⅛	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4
Ells	.12	.17	.21	.28	.35	.50	.85	1.10	1.50	3.50	4.50	7.00	10.00
Ells, 45°	....	.25	.30	.40	.50	.75	1.25	1.65	2.25	5.25	6.75	.....	.....
Ells, Street	....	.35	.35	.55	.75	1.00	1.80	2.50	3.25	.....	.....	.....	.....
Ells, Reducing	....	.22	.26	.35	.45	.62	1.10	1.40	1.90	4.40	5.65	8.75	12.50
Ells, Drop, Female	....	.20	.30	.40	.60	.85	1.20	1.90	2.50	.....	.....	.....	.....
Ells, Side Outlet	....	....	.30	.40	.60	.85	1.20	1.60	.....	.....	.....	.....	.....
Tees	.15	.20	.30	.40	.50	.75	1.00	1.30	1.75	4.00	5.50	9.00	13.00
Tees, Reducing	....	.25	.38	.50	.63	.95	1.25	1.65	2.20	5.00	6.90	11.25	16.25
Tees, Drop, Female	....	....	.35	.45	.70	1.05	....	....	....	....	....	....	....
Tees, 4-Way	....	....	....	.50	.70	1.00	1.35	1.80	....	....	....	....	....
Crosses	.20	.30	.40	.50	.60	.80	1.50	2.00	3.50	5.00	7.00	10.00	14.50
Crosses, Reducing	....	.38	.50	.65	.75	1.00	1.90	2.50	4.40	6.25	8.75	12.50	18.00
*Bushings	....	.10	.12	.14	.21	.38	.50	.67	1.00	1.50	....	....	....
Plugs	.09	.10	.12	.15	.20	.28	.40	.50	.80	1.25	2.00	3.00	4.00
Countersunk Plugs	....	....	....	.30	.40	.56	.80	1.00	1.80	2.50	4.00	.....	.....
Solid Brass Plugs	.18	.20	.24	.30	.40	.56	.80	1.00	1.80	2.50	4.00	6.00	8.00
Caps	.15	.15	.20	.25	.35	.45	.60	.80	1.10	2.00	3.00	5.00	6.00
Lock Nuts	.10	.10	.12	.15	.20	.30	.45	.70	.95	1.50	2.75	.....	.....
Reducers	....	.16	.22	.32	.45	.65	.90	1.12	1.85	3.00	4.50	.....	.....
Couplings	.10	.14	.16	.25	.37	.50	.60	.90	1.55	2.40	3.50	.....	.....
Couplings, R. & L.	....	.17	.20	.30	.45	.60	.75	1.12	1.75	.....	.....	.....	.....
Return Bends Close	....	....	....	.56	.70	1.00	1.70	2.20	3.00	.....	.....	.....	.....
Return Bends Medium	....	....	....	.63	.80	1.15	2.00	2.50	3.50	.....	.....	.....	.....
Return Bends Open	....	....	....	.70	.88	1.25	2.15	2.75	3.75	.....	.....	.....	.....
Unions, Ground Joints	.32	.36	.50	.70	.90	1.25	1.70	2.50	3.60	6.00	7.75	.....	.....
Unions, Ground Joints, Semi-finished	.32	.36	.52	.70	.90	1.25	1.70	2.50	3.60	6.00	7.75	....	.....

Finished

Size.....inches	⅛	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4
Ells	.24	.34	.42	.56	.76	1.00	1.70	2.20	3.00	7.00	9.00	14.00	20.00
Ells, 45°	....	.42	.50	.68	.85	1.25	2.10	2.75	3.75	8.75	11.00	.....	.....
Ells, Street	....	.56	.56	.83	1.10	1.50	2.65	3.60	4.75	.....	.....	.....	.....
Ells, Reducing	....	.44	.52	.70	.90	1.25	2.20	2.80	3.80	8.80	11.30	17.50	25.00
Ells, Drop, Female	....	.40	.60	.80	1.20	1.70	2.40	3.80	5.00	.....	.....	.....	.....
Ells, Side Outlet	....	....	.60	.80	1.20	1.70	2.40	3.20	....	.....	.....	.....	.....
Tees	.30	.40	.60	.80	1.00	1.50	2.00	2.60	3.50	8.00	11.00	18.00	26.00
Tees, Reducing	....	.50	.76	1.00	1.25	1.90	2.50	3.30	4.40	10.00	13.80	22.50	32.50
Tees, Drop, Female	....	....	.70	.90	1.40	2.10	....	....	....	.....	.....	.....	.....
Tees, 4-Way	....	....	....	1.00	1.40	2.00	2.70	3.60	....	.....	.....	.....	.....
Crosses	.40	.60	.80	1.00	1.20	1.60	3.00	4.00	7.00	10.00	14.00	20.00	29.00
Crosses, Reducing	....	.75	1.00	1.30	1.50	2.00	3.80	5.00	8.80	12.50	17.50	25.00	36.00
*Bushings	....	.20	.24	.28	.42	.76	1.00	1.35	2.00	3.00	.....	.....	.....
Plugs	.18	.20	.24	.30	.40	.56	.80	1.00	1.80	2.50	4.00	6.00	8.00
Countersunk Plugs	....	....	....	.60	.80	1.12	1.60	2.00	3.60	5.00	8.00	.....	.....
Solid Brass Plugs	.36	.40	.48	.60	.80	1.12	1.16	2.00	3.60	5.00	8.00	12.00	16.00
Caps	.30	.30	.40	.50	.70	.90	1.20	1.60	2.20	4.00	6.00	10.00	12.00
Lock Nuts	.20	.20	.24	.30	.40	.60	.90	1.40	1.90	3.00	5.50	.....	.....
Reducers	....	.32	.44	.64	.90	1.30	1.80	2.25	3.70	6.00	9.00	....	.....
Couplings	.20	.28	.32	.50	.75	1.00	1.20	1.80	2.70	4.80	7.00	.....	.....
Couplings, R. & L.	....	.31	.36	.55	.82	1.10	1.35	2.00	3.10	.....	.....	.....	.....
Return Bends, Close	....	....	....	1.12	1.40	2.00	3.40	4.40	6.00	.....	.....	.....	.....
Return Bends, Medium	....	....	....	1.26	1.60	2.30	4.00	5.00	7.00	.....	.....	.....	.....
Return Bends, Open	....	....	....	1.40	1.75	2.50	4.30	5.50	7.50	.....	.....	.....	.....
Unions, Ground Joints	.32	.36	.50	.70	.90	1.25	1.70	2.50	3.60	6.00	7.75	.....	.....

For nipples, see following page.

All nickel plated brass fittings are 20% in advance of above list.

*Bushings listed above reduce one size only. For list of other sizes, see opposite page.

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BRASS STEAM FITTINGS

Iron Pipe Sizes

BRASS NIPPLES

Suitable for Steam Working Pressures up to 125 Pounds

Size Inches	Length, Inches										
	Close	1½	2	2¼	3	3¼	4	4¼	5	5¼	6
⅛....each	.16	.16	.19	.22	.25	.28	.31	.34	.37	.40	.43
¼.... "	.20	.20	.24	.28	.32	.36	.40	.44	.48	.52	.56
⅜.... "	.23	.23	.28	.33	.38	.43	.48	.53	.58	.63	.68
½.... "	.30	.30	.36	.42	.48	.54	.60	.66	.72	.78	.84
¾.... "	.32	..	.39	.46	.53	.60	.67	.74	.81	.88	.95
1 .... "	.40	..	.49	.58	.67	.76	.85	.94	1.03	1.12	1.21
1¼.... "	.63	..	..	.75	.87	.99	1.11	1.23	1.35	1.47	1.59
1½.... "	.74	..	..	.88	1.02	1.16	1.30	1.44	1.58	1.72	1.86
2 .... "	1.00	..	..	1.19	1.38	1.57	1.76	1.95	2.14	2.33	2.52
2½.... "	1.80	..	..	...	2.04	2.32	2.60	2.88	3.16	3.44	3.72
3 .... "	2.50	..	..	...	2.80	3.20	3.60	4.00	4.40	4.80	5.20
3½.... "	4.00	..	..	...	...	...	5.10	5.68	6.26	6.84	7.42
4 .... "	4.75	..	..	...	...	...	5.86	6.53	7.20	7.87	8.54
4½.... "	6.00	..	..	...	...	...	7.20	8.01	8.82	9.63	10.44
5 .... "	8.50	..	..	...	...	...	...	10.30	11.35	12.40	13.45
6 .... "	11.50	..	..	...	...	...	...	13.65	15.05	16.45	17.85

CAST IRON PATTERN—ROUGH

Iron Pipe Size

Suitable for Steam Working Pressures up to 250 Pounds

Fig. H-1169 Elbow

Fig. H-1170 Tee

Fig H-1171 Cross

Size.....inches	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4
Elbows, Fig. H-1169..each	.28	.36	.70	1.00	1.50	2.00	3.00	5.50	8.50	12.50	16.00
Ells, Reducing. "	.32	.42	.80	1.15	1.72	2.30	3.45	6.30	9.75	14.50	18.50
Ells, R. and L. "	....	.42	.80	1.15	1.72	2.30	3.45	6.30	9.75	14.50	18.50
Ells, 45°..... "	....	.43	.84	1.20	1.80	2.40	3.60	6.60	10.20	15.50	20.00
Tees, Fig. H-1170... "	.40	.65	1.00	1.35	2.00	3.00	4.50	7.50	11.00	16.50	20.00
Tees, Reducing. "	.46	.75	1.15	1.55	2.30	3.45	5.20	8.60	12.65	18.00	22.00
Crosses, Fig. H-1171.. "	....	.90	1.30	1.80	2.75	4.00	5.25	9.00	14.00	21.00	27.00
Crosses, Reducing.... "	....	1.04	1.50	2.10	3.15	4.60	6.00	10.35	16.00	24.00	30.00
Bushings..... "	....	.28	.42	.76	1.00	1.34	2.00	3.00	5.00	7.50	10.50
Return Bends, close.. "	....	.70	.85	1.00	2.25	2.75	4.50	....	....	....	....
Return Bends, open.. "	....	.75	1.00	1.75	3.00	3.75	6.00	....	....	....	....

Finished brass fittings made from cast iron pattern at double above lists.

We can supply other brass fittings made from any cast iron or malleable patterns at special prices.

BRASS FLANGE UNIONS—ROUGH

Faced. With Iron Bolts

Suitable for Steam Working Pressures up to 125 Pounds

Fig. H-1172

Size..... inches	½	¾	1	1¼	1½	2	2½
Diameter of Flange....inches	3⅛	3⅛	3¾	4⅛	4⅝	5¼	6
No. of Bolts.....	3	3	4	4	4	4	4
Each	3.50	3.50	3.75	4.25	5.60	6.50	8.50

Size..... inches	3	3½	4	4½	5	6	
Diameter of Flange....inches	6¾	7⅜	8⅛	8¾	9 5/16	10¾	....
No. of Bolts.....	4	4	5	5	5	6	....
Each	10.50	13.50	15.00	20.00	22.00	27.00	....

No gasket furnished unless ordered.

An extra charge will be made for gaskets.

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BRASS UNIONS

Heavy Octagon Pattern
Tested to 500 Pounds Cold Water Pressure
Suitable for Steam Working Pressures up to 200 Pounds

Fig. H-1174

Size...inches	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
No. H-1173 Rough	.35	.40	.55	.75	1.00	1.40	1.90	2.75	4.00	6.50	8.50	13.50	18.50
Fig. H-1174, Finished	.50	.55	.75	1.00	1.50	2.00	2.50	3.00	4.50	7.50	10.00	.....	.....

Can also furnish heavy pattern brass union with round tail piece and hexagonal thread end and nut, or with round ends and hexagon nut at special prices.

EXTRA HEAVY HYDRAULIC BRASS UNIONS

Tested to 2000 Pounds Cold Water Pressure
Suitable for Working Pressures up to 800 Pounds

Fig. H-1175

Size.....inches	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Each.....	1.25	1.50	2.00	3.00	4.00	5.00	7.00	10.00	12.00	15.00

While these hydraulic unions are designed and recommended for use on pressures up to 800 pounds, many of them have been successfully used at considerably higher pressures.

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VALVES FOR WORKING BARRELS

With Loose Steel Seats — Brass Balls

Fig. H-1176
Upper Valve

Fig. H-1177
Lower Valve

Special prices furnished upon application.

These valves are designed particularly for use in oil fields.

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VALVES FOR WORKING BARRELS

Brass Crown and Ball, Steel Seat

Fitted with Two Cups

Fig. H-1178

Size.....inches	1¼
Each	1.50

Discount quoted on application.

These valves are designed particularly for use in oil fields.

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BRASS STUFFING BOXES

For Working Barrels

Fig. H·1179

Size ..... inches	1⅛ x 2	1¼ x 2
Each	2.00	2.25

Discount quoted on application.

These stuffing boxes are designed particularly for use in oil fields.

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BLAST FURNACE FITTINGS

The Blast Furnace Fittings shown on the succeeding pages are particularly recommended when reliability and long service are desired.

While the pressures ordinarily used in the cooling systems of blast furnaces are low, the hard usage, deteriorating effects of bad water, and serious consequences incident to a failure in any part, demand the very heavy construction used in our fittings.

In addition to the fittings shown in this section, we are prepared to furnish fittings according to samples submitted, at a special price which will be quoted on application. We would recommend, however, the use of our standard fittings as shown on following pages.

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BLAST FURNACE FITTINGS

TUYERE UNIONS

Brass. Heavy Pattern

Fig. H-1190

Regular

Fig. H-1191

With Hose Spud

Size.....	½	¾	1	1¼	1½
Fig. H-1190, Regular.....each	1.50	1.90	3.00	3.50	4.60
Fig. H-1191, with Hose Spud.. "	1.95	2.40	3.80	4.40	5.75

These unions are regularly furnished with ball on bottom, but they can also be furnished with ball on thread end when so specified.

We can also furnish hydraulic tuyere unions at a special price which will be quoted on application.

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BLAST FURNACE FITTINGS

UNIVERSAL BALL-JOINT UNIONS

Brass. Heavy Pattern

Fig. H-1192

Size .....inches	½	¾	1	1¼	1½
Each	2.10	2.50	3.50	4.60	7.00

These unions allow a marked deflection of the piping at the joint, and are consequently very serviceable for making tuyere connections.

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BLAST FURNACE FITTINGS

HOSE COUPLINGS

Brass. Heavy Pattern

Fig. H-1193

Size ..... inches	$1\frac{1}{4}$
Each	7.50

TUYERE COCKS

Brass. Three-Way. Heavy Pattern

Fig. H-1194
Left Hand Pattern

Size ..... inches	$1\frac{1}{4}$	$1\frac{1}{2}$
Fig. H-1194, with Malleable Wrench, Brass Cap and Union ... each	12.75	19.25
No. H 1195, with Malleable Wrench and Cap and Brass Union "	12.50	18.75

The brass used in these cocks is a high grade bronze, having great strength and excellent wearing qualities.

The above cock can be furnished in either right-hand or left-hand pattern, i. e., with side outlet on either side, and with male or female pipe thread opposite union end. Orders for these cocks should specify fully the kind wanted.

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BLAST FURNACE FITTINGS

UNION GATE VALVES

Brass. Heavy Pattern

Fig. H-1196

WITH HOSE SPUD

Size ..... inches	1¼
Each	20.00

Other sizes can be made to order at special prices.

The brass used in these valves is a high grade of bronze, having great strength and excellent wearing qualities.

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CONVERSE AND MATHESON PATENT LOCK JOINT FITTINGS

We would call the attention of our patrons to our line of Converse and Matheson Patent Lock Joint Fittings.

These fittings are made from the same high grade cast iron used in our other fittings, and are cast to uniform patterns strictly in conformity with diameter of the pipe.

The line is quite comprehensive, consisting of such fittings as hubs, ells, tees, crosses, Y's, reducers, caps, plugs and specials. These fittings are not illustrated in this catalogue, but we will gladly furnish booklet of information and quote prices upon request.

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IRON COCKS

The following illustrations set forth quite clearly improvements made in Standard Iron Cocks wherein we obtain additional strength, an opening full area of pipe, and on account of the large plug and body an increased bearing affording a tight seal under excessive pressures.

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STANDARD IRON COCKS

Square or Flat Heads

For Steam Working Pressures up to 125 Pounds

Fig. H-1300

SCREWED

Size.....inches	½	¾	1	1¼	1½	2
Fig. H-1300, All Iron.....	.90	1.05	1.30	1.60	1.95	2.70
No. H-1301, Iron, with Brass Washer	1.00	1.20	1.55	1.95	2.35	3.20
No. H-1302, Iron, with Brass Plug and Iron Washer.	1.30	1.60	1.90	2.65	3.75	5.25
No. H-1303, Iron, with Brass Plug and Brass Washer	1.40	1.75	2.15	3.00	4.15	5.75
Size.....inches	2½	3	3½	4	5	6
Fig. H-1300, All Iron.....	4.40	6.75	12.00	15.50	32.00	45.00
No. H-1301, Iron, with Brass Washer	5.15	7.75	14.00	19.00	38.00	53.00
No. H-1302, Iron, with Brass Plug and Iron Washer.	8.75	13.00	27.50	36.50	67.00	94.00
No. H-1303, Iron, with Brass Plug and Brass Washer	9.50	14.00	29.50	40.00	73.00	102.00

Iron cocks are furnished with screwed ends unless otherwise specified.
Square head cocks will be furnished unless otherwise specified.

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STANDARD IRON COCKS

Square or Flat Heads

For Steam Working Pressures up to 125 Pounds

Fig. H-1304

FLANGED

Size.....inches	2	2½	3	3½	4	5	6
Fig. H-1304, All Iron.....each	4.20	6.25	6.50	15.00	19.00	36.00	50.00
No. H-1305, Iron, with Brass Washer..... "	4.75	7.00	10.50	17.00	22.50	42.00	58.00
No. H-1306, Iron, with Brass Plug and Iron Washer "	7.00	10.50	15.75	30.00	40.00	70.00	100.00
No. H-1307, " " " " " Brass " "	7.50	11.25	16.75	32.00	43.50	76.00	108.00
Diameter of Flanges.....inches	6	7	7½	8½	9	10	11

These cocks are made to order only.

Square head cocks will be furnished unless otherwise specified.

Can also be furnished 1 inch, 1¼ inch and 1½ inch. Prices on application.

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STANDARD IRON COCKS — THREE-WAY

Square or Flat Heads

For Working Pressures up to 125 Pounds

Fig. H-1308

SCREWED

Size ..... inches	¾	1	1¼	1½	2
Fig. H-1308, All Iron	1.65	1.80	2.05	2.65	3.65
No. H-1309, Iron, with Brass Washer.....	1.80	2.05	2.40	3.05	4.15
No. H-1310, Iron, with Brass Plug and Iron Washer.....	2.20	2.40	3.10	4.50	6.25
No. H-1311, Iron, with Brass Plug and Brass Washer.....	2.35	2.65	3.45	4.90	6.75
Size ..... inches	2½	3	3½	4	....
Fig. H-1308, All Iron	5.35	7.50	14.00	19.00	....
No. H-1309, Iron, with Brass Washer	6.10	8.50	16.00	22.50	....
No. H-1310, Iron, with Brass Plug and Iron Washer.....	9.75	13.75	30.00	40.00	....
No. H-1311, Iron, with Brass Plug and Brass Washer.....	10.50	14.75	32.00	43.50	....

Square head cocks will be furnished unless otherwise specified.

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IRON SERVICE COCKS

Square or Flat Heads

For Working Pressures up to 125 Pounds

Fig. H-1312

SCREWED

Sizes, ½ to 3 inches, inclusive.

Special prices upon application.

Flat-head cocks will be furnished unless otherwise specified

This cock is made to order only and is specially designed for street service work for gas companies. The plug and washer are made of brass.

The plug is ground in by special machinery and the cock is tested with extreme air pressure under water.

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SPECIAL SPRING PLUG COCK

The Special Spring Plug Cock was designed to overcome the disadvantages of the ordinary style, or Through-Plug Cock.

With the ordinary style of cock, when the plug becomes loose, the workman frequently injures the plug in tightening it. Then again should the plug become cemented to the body, it is common practice to loosen the nut and drive up the plug with whatever tools are at hand, no special care being taken to properly adjust the plug afterward.

This Cock has an inverted plug with a spring at the bottom, which constantly presses the plug firmly against the seat. While the plug usually turns easily, should it stick occasionally, it may be loosened by a blow on the top, after which it is immediately reseated by the spring. The cap at the bottom is screwed securely into the body and cannot be tampered with by the workman.

These Cocks are tested before shipment to 250 pounds cold water pressure and to 100 pounds air pressure under water, and are recommended for 100 pounds working pressure.

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SPECIAL SPRING PLUG COCK

For Working Pressures up to 100 Pounds

Fig. H-1315

COCKS WITH IRON BODIES, BRASS PLUGS AND SPRINGS

For Compressed Air, Steam or Water

Size.....inches	½	¾	1	1¼	1½	2	2½	3
No. H-1313, Cocks, without Handles..each	1.40	1.95	2.45	3.75	6.65	10.55	23.00	36.50
No. H-1314, Handles..... "	.07	.09	.14	.25	.44	.56	.80	1.00
Fig. H-1315, Cocks with Handles Riveted on.. "	1.65	2.25	2.85	4.40	7.55	11.65	25.00	38.00

ALL BRASS

For Compressed Air, Steam or Water

Size.....inches	½	¾	1	1¼	1½	2	2½	3
No. H-1313, Cocks, without Handles..each	....	3.00	6.35	....	....	....	....	....
No. H-1314, Handles..... "	....	.09	.14	....	....	....	....	....
Fig. H-1315, Cocks with Handles Riveted on.. "	....	3.30	6.75	....	....	....	....	....

ALL IRON

For Alkaline Solutions

Size.....inches	½	¾	1	1¼	1½	2	2½	3
No. H-1313, Cocks, without handles.. each	.80	1.20	1.95	2.65	4.95	7.15	15.00	22.35
No. H-1314, Handles..... "	.07	.09	.14	.25	.44	.56	.80	1.00
Fig. H-1315, Cocks with Handles Riveted on.. "	1.05	1.50	2.40	3.30	5.85	8.25	16.00	23.85

Tested to 250 pounds cold water pressure, and also to 100 pounds air pressure under water.

Unless otherwise ordered, these cocks will be furnished with handle riveted on.

We can also furnish these cocks at a special price, with round opening through plug. This is desirable when accurate regulation of delivery is required, as when used for cooling water on the necks of rolls.

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EXTRA HEAVY IRON COCKS

Square or Flat Heads

Oil Country. Brass Washer

For Working Pressures up to 200 Pounds

Fig. H-1316

Size ..... inches	1	2
Each	2.00	4.50

Square head cocks will be furnished unless otherwise specified.

Can also furnish with brass plug at special price.

Specially designed for oil country service.

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STANDARD
IRON BODY VALVES

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STANDARD IRON BODY VALVES

GLOBE, ANGLE, CROSS, CHECK AND SAFETY VALVES

These valves are well proportioned, as can be seen from the illustrations on the succeeding pages.

We make the Globe and Angle Valves in the following styles: Plain brass mounted, to 3 inches inclusive; brass mounted with yoke, in sizes 2 inches and larger; and either of the above styles equipped with Jenkins disc, or soft annealed copper disc of same form.

The seats and disc faces are regularly made of brass.

GATE VALVES

These Valves are made in two different styles, viz: Wedge Gate and Double Disc.

The Wedge Gate Valves are made in sizes from 2 inches up to 24 inches inclusive. The bodies of these Valves are designed with long radius curves, and have ample guides for the gate so that the faces do not touch the seats until the Valve is entirely closed.

The Double Disc Valves have parallel seats and are made in sizes from 2 inches to 12 inches inclusive. The construction is as follows: A wedge or sleeve, which is connected with the Valve stem, either rigidly or by means of a screw thread depending on the style of Valve, supports the gates and presses them firmly against the seats when the Valve is closed. The pressure from this wedge is applied directly at the center of the discs so that the distribution of pressure at the seat is uniform all the way around. At the same time, the first movement of opening releases the gate from the seats so that there can be no rubbing or scraping.

The stuffing box gland is made of malleable iron, which will prevent troublesome breakages at this point on account of bolts being unequally tightened. For interior construction of these Valves see pages 400, 401, 402, 403.

Both styles of Valves have seats of brass, screwed in. The bearing surfaces of the discs are also brass, rolled into place and held by a dovetailed groove. When Valves are so ordered we can furnish them of all iron construction, which is desirable for use with certain liquids.

We make these Valves with stationary or non-rising stem, and with outside screw and yoke. We also make them as quick-opening Valves. In addition to screwed and flanged ends, they are made with hub ends for cast iron water pipe, and with Converse or Matheson joint hubs. Special flanged ends with companion flanges to match can be furnished at a special price.

GENERAL

All these Valves are so constructed as to admit of being packed under pressure when wide open. Care should be taken to screw the disc up firmly against the bonnet before starting to remove the old packing.

RECOMMENDATIONS

For specific recommendations, see page upon which Valve is illustrated.

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STANDARD IRON BODY GLOBE AND ANGLE VALVES

Fig. H-1350

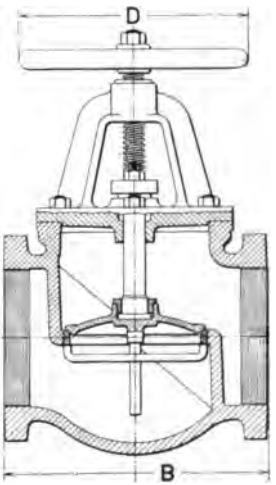

Fig. H-1351

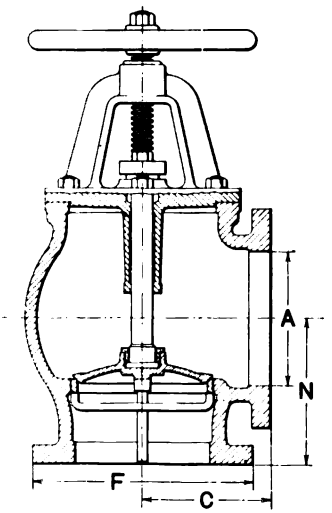

TABLE OF DIMENSIONS

Diameter of Port.....inches	A	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
Length of Screwed End....ins.	B	5 11/16	6 5/8	7 3/16	8 1/16	9 1/16	9 5/8	10 3/8	12 5/8	14 1/16	16 1/2	17	19 1/8	21 3/4
Face to Face, Flanged End "	B	5 5/8	6 11/16	7 11/16	8 1/16	9 1/16	9 3/4	11	13	13 3/8	15 3/4	17 3/8	19 3/4	21 5/8
Center to Face of Outlet, Flanged... "	C	3 3/4	4 1/4	4 1/2	5	5 1/4	5 1/2	6 1/2	6 5/8	7	7 7/8	9	9 7/8	12
Center to Face of Outlet, Screwed... "	C	3	3 1/4	3 3/4	4 1/2	4 11/16	4 13/16	5 1/2	6 3/8	7 1/8	8 1/8	8 3/4	9 1/2	11 1/8
Center to Face Inlet, Flanged..... "	N	3 3/4	4 1/4	4 1/2	5	5 1/4	5 1/2	6 1/2	6 5/8	7 1/2	9	9	9 7/8	12
Center to Face Inlet, Screwed..... "	N	3	3 1/4	3 3/4	4 1/2	4 11/16	4 13/16	5 1/2	6 3/8	7 3/8	9 1/8	8 3/4	9 1/2	11 1/8
Diameter of Flanges..... "	F	6	7	7 1/2	8 1/2	9	9 1/4	10	11	12 1/2	13 1/2	15	16	19
Thickness of Flanges..... "	....	5/8	11/16	3/4	11/16	11/16	13/16	13/16	1	1 1/16	1 1/8	1 1/8	1 3/16	1 1/4
No. of Bolts.....	....	4	4	4	4	4	8	8	8	8	8	12	12	12
Size of Bolts.....ins.	....	5/8	5/8	5/8	5/8	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	7/8	7/8
Diameter Bolt Circle..... "	....	4 3/4	5 1/2	6	7	7 1/2	7 3/4	8 1/2	9 1/2	10 3/4	11 3/4	13 1/4	14 1/4	17
Diameter of Hand Wheel.. "	D	5	5	6	7 1/2	9	10	11	12	13	14	14	18	20
Center of Run to Top of Stem-Open-Globe "	....	8 7/8	9 1/16	11 3/16	12 1/16	13 5/8	14 13/16	16 1/16	17 3/4	20 1/16	22 1/2	25 1/16	28 1/16	32 1/16
Center of Run to Top of Stem-Open-Angle "	....	8 1/16	9 3/16	11 1/16	12 1/16	14	14 13/16	16 1/16	18 1/16	20 1/16	21 3/4	25 1/4	28 3/16	32 1/2

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STANDARD IRON BODY GLOBE, ANGLE AND Y VALVES

Fig. H-1352
Globe Valve

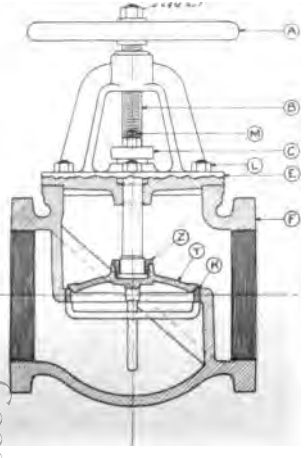


Fig. H-1353
Angle Valve

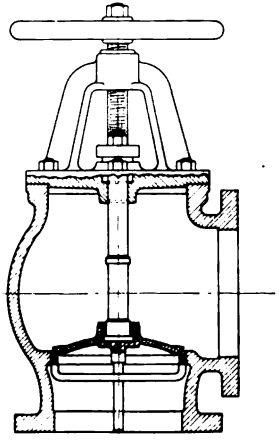
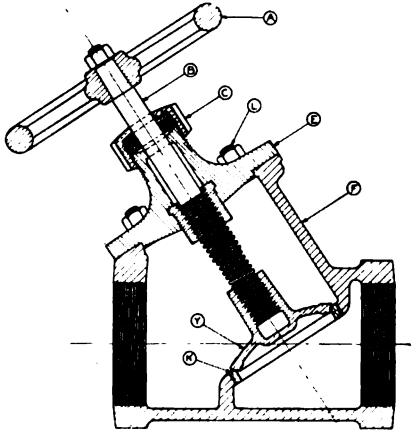


Fig. H-1354
Y Valve



NAME OF PART

A	B	C	E	F	K	L	M	Y	Z
Hand Wheel	Stem	Gland	Bonnet	Body	Seat Ring	Bonnet Studs	Gland Studs	Swivel	Swivel Ring

NAME OF PART

A	B	C	H	F	K	L	Y
Hand Wheel	Stem	Stuffing Nut	Bonnet	Body	Seat Ring	Bonnet Studs	Swivel

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STANDARD IRON BODY GLOBE VALVES

Brass Mounted. Plain

For Steam Working Pressures up to 100 Pounds

Fig. H-1355
Globe Valve

SCREWED

Size.....inches	1	1¼	1½	2	2½	3
Fig. H-1355 .....each	2.25	2.75	3.50	5.40	7.35	9.80

FLANGED

Size.....inches	2	2½	3
No. H-1356 .....each	7.00	9.00	12.50
Diameter of Flanges.....inches	6	7	7½

Screwed end valves will be furnished unless otherwise specified.

Valve seats, discs, stems and bonnets are made of brass.

These valves are so constructed as to admit of being packed under pressure when wide open.

For general description, see page 368.

Templates for drilling, see page 196.

Price list for drilling, see page 413.

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STANDARD IRON BODY ANGLE VALVES

Brass Mounted — Plain

For Steam Working Pressures up to 100 Pounds

Fig. H-1357

Angle Valve

SCREWED

Size ..... inches	1	1¼	1½	2	2½	3
Fig. H-1357 ..... each	2.25	2.75	3.50	5.40	7.35	9.80

FLANGED

Size ..... inches	2	2½	3
No. H-1358 ..... each	7.00	9.00	12.50
Diameter of Flanges ..... inches	6	7	7½

Screwed end valves will be furnished unless otherwise specified.

Valve seats, discs, stems and bonnets are made of brass. These valves are so constructed as to admit of being packed under pressure when wide open.

For general description see page 368.
Templates for drilling, see page 196.
Price list for drilling, see page 413.

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STANDARD IRON BODY CROSS VALVES

Brass Mounted — Plain

For Steam Working Pressures up to 100 Pounds

Fig. H-1359
Cross Valve

SCREWED

Size ..... inches	2	2½	3
Fig. H-1359 ..... each	6.50	9.00	12.50

FLANGED

Size ..... inches	2	2½	3
No. H-1360 ..... each	9.00	11.75	16.50
Diameter of Flanges ..... inches	6	7	7½

Screwed end valves will be furnished unless otherwise specified.

Valve seats, discs, stems and bonnets are made of brass.

These valves are so constructed as to admit of being packed under pressure when wide open.

For general description, see page 368.
Templates for drilling, see page 196.
Price list for drilling, see page 413.

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STANDARD IRON BODY GLOBE VALVES

Brass Mounted — With Yoke

For Steam Working Pressures up to 100 Pounds

Fig. H-1361
Globe Valve

SCREWED

Size.....inches	2	2½	3	3½	4	4½	5
Each.....	7.00	9.00	12.50	15.25	19.00	24.00	27.00
Size.....inches	6	7	8	9	10	12	....
Each.....	37.50	63.00	72.00	100.00	114.00	170.00	....

Screwed end valves will be furnished unless otherwise specified.

Three-inch valves and smaller will be furnished without yoke unless otherwise specified.

Valves of sizes 8 inches and smaller are furnished with brass stems. In the 9, 10 and 12 inch valves we use steel stems, but will furnish brass stems if desired, at an extra charge.

All iron valves can be furnished when so specified, otherwise valve seats and disc faces will be of brass.

These valves are so constructed as to admit of being packed under pressure when wide open.

We do not recommend the use of screwed end valves above 6 inches.

For general description, see page 368.
For table of dimensions, see page 369.
For names of parts, see page 370.

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STANDARD IRON BODY GLOBE VALVES

Brass Mounted—With Yoke

For Steam Working Pressures up to 100 Pounds

Fig. H-1362
Globe Valve

FLANGED

Size..... inches	2	2½	3	3½	4	4½	5
Each	8.60	10.75	15.00	18.50	22.50	27.50	31.00
Diam. of Flanges.....inches	6	7	7½	8½	9	9¼	10
Size..... inches	6	7	8	9	10	12	....
Each	42.00	68.00	77.00	110.00	123.00	187.00	....
Diam. of Flanges.....inches	11	12½	13½	15	16	19	....

Screwed end valves will be furnished unless otherwise specified.

Three-inch valves and smaller will be furnished without yoke unless otherwise specified.

Valves of sizes 8 inches and smaller are furnished with brass stems. In the 9, 10 and 12 inch valves we use steel stems, but will furnish brass stems if desired, at an extra charge.

All iron valves can be furnished when so specified, otherwise valve seats and disc faces will be of brass. These valves are so constructed as to admit of being packed under pressure when wide open.

For general description, see page 368.
For table of dimensions, see page 369.
For names of parts, see page 370.
Templates for drilling, see page 196.
Price list for drilling, see page 413.

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STANDARD IRON BODY ANGLE VALVES

Brass Mounted — With Yoke
For Steam Working Pressures up to 100 Pounds

Fig. H-1364
Angle Valve

SCREWED

Size.....inches	2	2½	3	3½	4	4½	5
Each.....	7.00	9.00	12.50	15.25	19.00	24.00	27.00
Size.....inches	6	7	8	9	10	12	....
Each.....	37.50	63.00	72.00	100.00	114.00	170.00	....

Screwed end valves will be furnished unless otherwise specified.
Three inch valves and smaller will be sent without yoke unless otherwise specified.
Valves of sizes 8 inches and smaller are furnished with brass stems. In the 9, 10 and 12 inch valves we use steel stems, but will furnish brass stems if desired, at an extra charge.
All iron valves can be furnished when so specified, otherwise valve seats and disc faces will be of brass.
These valves are so constructed as to admit of being packed under pressure when wide open.
We do not recommend the use of screwed end valves above 6 inches.
For general description, see page 368.
For table of dimensions, see page 369.
For names of parts, see page 370.

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STANDARD IRON BODY ANGLE VALVES

Brass Mounted — With Yoke
For Steam Working Pressures up to 100 Pounds

Fig. H-1364
Angle Valve

FLANGED

Size.....inches	2	2½	3	3½	4	4½	5
Each.....	8.60	10.75	15.00	18.50	22.50	27.50	31.00
Diameter of Flanges...inches	6	7	7½	8½	9	9¼	10
Size.....inches	6	7	8	9	10	12	.....
Each.....	42.00	68.00	77.00	110.00	123.00	187.00	.....
Diameter of Flanges...inches	11	12½	13½	15	16	19	.....

Screwed end valves will be furnished unless otherwise specified.

Three inch valve and smaller will be furnished without yoke unless otherwise specified.

Valves of sizes 8 inches and smaller are furnished with brass stems. In the 9, 10 and 12 inch valves we use steel stems, but will furnish brass stems if desired, at an extra charge.

All iron valves can be furnished when so specified, otherwise valve seats and disc faces will be of brass.

These valves are so constructed as to admit of being packed under pressure when wide open.

For general description, see page 368.
For table of dimensions, see page 369.
For names of parts, see page 370.
Templates for drilling, see page 196.
Price list for drilling, see page 413.

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STANDARD IRON BODY CROSS VALVES

Brass Mounted—With Yoke

For Steam Working Pressures up to 100 Pounds

Fig. H-1365

Cross Valve

SCREWED

Size.....inches	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
Fig. H-1365 ... each	8.50	11.75	16.25	20.00	23.50	30.65	35.25	47.25	78.00	92.00	150.00	162.00	240.00

FLANGED

Size.....inches	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
No. H-1366.....each	11.00	14.50	20.00	25.00	28.50	36.00	41.00	54.00	85.00	100.00	163.00	175.00	265.00
Diam. of Flanges...inches	6	7	7½	8½	9	9¼	10	11	12½	13½	15	16	19

Screwed end valves will be furnished unless otherwise specified.

Three-inch valves and smaller will be sent without yoke unless otherwise specified.

Valves of sizes 8 inches and smaller are furnished with brass stems. In the 9, 10, and 12-inch valves we use steel stems, but will furnish brass stems if desired at an extra charge.

All iron valves can be furnished when so specified. Otherwise valve seats and disc faces will be of brass.

These valves are so constructed as to admit of being packed under pressure when wide open.

We do not recommend the use of screwed end valves above 6 inches.

For general description, see page 368. For table of dimensions, see page 369.
For names of parts, see page 370.
Templates for drilling, see page 196. Price list for drilling, see page 413.

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STANDARD IRON BODY GLOBE AND ANGLE VALVES

With Jenkins Disc

Brass Mounted—Plain

For Steam Working Pressures up to 100 Pounds

Fig. H-1367

Globe Valve

SCREWED			
Size.....inches	2	2½	3
Fig. H-1367.....each	7.25	11.00	16.00
FLANGED			
Size.....inches	2	2½	3
Diameter of Flanges.....inches	6	7	7½
No. H-1368.....each	8.50	13.00	18.00
EXTRA DISCS			
Size.....inches	2	2½	3
Each.....	.36	.48	.66

Screwed end valves will be furnished unless otherwise specified.
Valve seats, disc holders, stems and bonnets are made of brass.
These valves are so constructed as to admit of being packed under pressure when wide open.

For general description, see page 368.
Templates for drilling, see page 196.
Price list for drilling, see page 413.

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STANDARD IRON BODY GLOBE AND ANGLE VALVES

With Jenkins Disc
Brass Mounted — With Yoke
For Steam Working Pressures up to 100 Pounds

Fig. H-1370
Globe Valve

SCREWED

Size ..... inches	2½	3	3½	4	4½	5
Each	12.00	16.75	19.50	24.00	32.00	40.00
Size ..... inches	6	7	8	9	10	12
Each	48.00	80.00	90.00	116.00	130.00	185.00

EXTRA DISCS

Size	2½	3	3½	4	4½	5	6	7	8	9	10	12
Each	.48	.66	.90	1.04	1.20	1.36	1.80	1.96	2.40	3.20	3.50	4.50

We do not recommend the use of screwed end valves above 6 inches.
For further description, see page 381.

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STANDARD IRON BODY GLOBE AND ANGLE VALVES

With Jenkins Disc

Brass Mounted — With Yoke

For Steam Working Pressures up to 100 Pounds

Fig. H-1371

Globe Valve

FLANGED

Size..inches	2½	3	3½	4	4½	5	6	7	8	9	10	12
Each.....	14.00	18.50	21.50	26.00	34.00	42.00	50.00	80.00	90.00	117.00	130.00	185.00
Diam. Flanges, ins.	7	7½	8½	9	9¼	10	11	12½	13½	15	16	19

EXTRA DISCS

Size.....inches	2½	3	3½	4	4½	5	6	7	8	9	10	12
Each.....	.48	.66	.90	1.04	1.20	1.36	1.80	1.96	2.40	3.20	3.50	4.50

Screwed end valves will be furnished unless otherwise specified.

Three inch valves and smaller will be furnished without yoke unless otherwise specified.

Valves of sizes 8 inches and smaller are furnished with brass stems. In the 9, 10 and 12 inch valves we use steel stems, but will furnish brass stems if desired, at an extra charge.

These valves are so constructed as to admit of being packed under pressure when wide open.

For general description, see page 368.
For face to face dimensions, see page 369.
Templates for drilling, see page 196.
Price list for drilling, see page 413.

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STANDARD IRON BODY Y VALVES

Brass Mounted

Brass or Jenkins Disc

For Steam Working Pressures up to 100 Pounds

Fig. H-1372

The Iron Body Y Valve differs from the all brass, shown on page 268, in the arrangement of stem, disc and seat, made possible because of larger sizes.

The stem is a differential screw of low pitch which rises half the distance of opening, making it possible to use the valve in close places, and because of low pitch insures against opening of valve by vibration.

The bonnet of valve is simple, fitted with a brass bushing for screw or stem, is of great strength and without yoke, which we discard because the stem, being a differential screw, rising but one-half the distance of opening, requires no further support.

The brass disc and seat are spherically ground, so that it matters not at what angle they come together, a tight seal can always be made and maintained.

For names of parts, see page 370.

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STANDARD IRON BODY Y VALVES

Brass Mounted

Brass or Jenkins Disc

For Steam Working Pressures up to 100 Pounds

Fig. H-1373

Size .....inches	2	2½	3	3½	4
Fig. H-1373, Brass Disc....	7.00	9.00	12.50	15.25	19.00
No. H-1374, Jenkins Disc...	10.00	12.00	16.75	19.50	24.00
Size .....inches	4½	5	6	7	8
Fig. H-1373, Brass Disc....	24.00	27.00	37.50	63.00	72.00
No. H-1374, Jenkins Disc...	32.00	40.00	48.00	80.00	90.00

EXTRA DISCS

Size.....inches	2	2½	3	3½	4	4½	5	6	7	8
Each.....	.36	.48	.66	.90	1.04	1.20	1.36	1.80	1.96	2.40

For names of parts, see page 370.

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STANDARD IRON BODY HORIZONTAL CHECK VALVES

Brass Mounted

For Steam Working Pressures up to 100 Pounds

Fig. H-1376
Horizontal Check

SCREWED

Size.....inches	1	1¼	1½	2	2½	3	3½	4
Fig. H-1376.....each	1.50	2.20	2.65	3.60	6.50	8.90	12.25	14.25
Size.....inches	4½	5	6	7	8	10	12	....
Fig. H-1376.....each	19.00	22.00	30.00	45.00	57.00	105.00	155.00	....

FLANGED

Size.....inches	1	1¼	1½	2	2½	3	3½	4
Diameter of Flanges.....inches	4	4½	5	6	7	7½	8½	9
No. H-1377.....each	2.50	3.25	4.00	5.25	8.25	11.50	15.50	18.00
Size.....inches	4½	5	6	7	8	10	12	....
Diameter of Flanges.....inches	9¼	10	11	12½	13½	16	19	....
No. H-1377.....each	22.50	26.00	35.00	50.00	62.00	115.00	175.00	....

Screwed end valves will be furnished unless otherwise specified.
Three and one-half inch and larger made with iron cap, bolted on.
We do not recommend the use of screwed end valves above six inches.
For general description, see page 368.
For face to face dimensions of valves, see table, page 369.
Templates for drilling, see page 196.
Price list for drilling, see page 413.

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STANDARD IRON BODY ANGLE CHECK VALVES

Brass Mounted

For Steam Working Pressures up to 100 Pounds

Fig. H-1378
Angle Check

SCREWED

Size ..... inches	1¼	1½	2	2½	3	3½
Fig. H-1378 ..... each	2.20	2.65	3.60	6.50	8.90	12.25
Size ..... inches	4	4½	5	6	7	8
Fig. H-1378 ..... each	14.25	19.00	22.00	30.00	45.00	57.00

FLANGED

Size ..... inches	2	2½	3	3½	4
No. H-1379 ..... each	5.25	8.25	11.50	15.50	18.00
Diameter of Flanges	6	7	7½	8½	9
Size ..... inches	4½	5	6	7	8
No. H-1379 ..... each	22.50	26.00	35.00	50.00	62.00
Diameter of Flanges ..... inches	9¼	10	11	12½	13½

Screwed end valves will be furnished unless otherwise specified.
Three and one-half inch and larger made with iron cap, bolted on.
We do not recommend the use of screwed end valves above 6 inches.
For general description, see page 368.
For center to face dimensions of valves, see table, page 369.
Templates for drilling, see page 196.
Price list for drilling, see page 413.

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STANDARD IRON BODY VERTICAL CHECK VALVES

For Steam Working Pressures up to 100 Pounds

Fig. H-1380

SCREWED

Size.....inches	2½	3	3½	4	4½	5	6	7	8
Fig. H-1380.....each	9.50	12.50	17.00	21.00	30.00	33.00	40.00	62.00	73.00

FLANGED

Size.....inches	2½	3	3½	4	4½	5	6	7	8	10
No. H-1381.....each	11.50	15.00	20.00	25.00	33.50	37.00	45.00	67.00	78.00	135.00
Diam. of Flanges	7	7½	8½	9	9¼	10	11	12½	13½	16

Screwed end valves will be furnished unless otherwise specified.
We do not recommend the use of screwed end valves above 6 inches.
For general description, see page 368.
For face to face dimensions of valves, see table, page 369.
Templates for drilling, see page 196.
Price list for drilling, see page 413.

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STANDARD IRON BODY SWING CHECK VALVES

For Steam Working Pressures up to 100 Pounds

Fig. H-1382

Size ..... inches	2½	3	3½	4	4½	5
Fig. H-1382, Screwed ..... each	15.00	18.00	24.00	27.00	33.00	38.00
No. H-1383, Flanged ..... "	17.00	21.00	27.00	30.00	36.00	42.00
" H-1384, Hub ..... "	.....	24.00	.....	35.00	.....	48.00
Face to Face, Flanged ..... inches	8½	9½	10½	11	12	13
Diameter of Flanges ..... "	7	7½	8½	9	9¼	10

Size ..... inches	6	7	8	10	12	14
Fig. H-1382, Screwed ..... each	48.00	62.00	75.00	125.00	200.00	....
No. H-1383, Flanged ..... "	52.00	67.00	80.00	135.00	220.00	350.00
" H-1384, Hub ..... "	60.00	.....	90.00	160.00	265.00	375.00
Face to Face, Flanged ..... inches	14	16	17	20	24	28
Diameter of Flanges ..... "	11	12½	13½	16	19	21

Size ..... inches	15	16	18	20	24
No. H-1383, Flanged .... each	425.00	475.00	700.00	850.00	1200.00
" H-1384, Hub ..... "	....	500.00	750.00	900.00	1300.00
Face to Face, Flanged ..... inches	30	32	36	40	48
Diameter of Flanges ..... "	22¼	23½	25	27½	32

These valves may be used in either horizontal or vertical positions. They are made with brass seats, and brass or leather disc faces. When subject to high temperature, as when used for steam, the brass disc face should always be used. Unless otherwise specified, screwed end valves will always be furnished in sizes 12 inches and smaller.

Screwed and flanged end valves will be furnished with brass disc faces.

Hub end valves will be furnished with leather disc faces.

We do not recommend the use of screwed end valves above 6 inches.

For general description, see page 368.

Templates for drilling, see page 196. Price list for drilling, see page 413.

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STANDARD IRON BODY CHECK VALVES

Horizontal, Angle or Vertical. With Jenkins Disc

For Steam Working Pressures up to 100 Pounds

Fig. H-1385

Horizontal Valve

3½ inches and larger made with iron cap bolted on.

Size.....inches	2½	3	3½	4	5	6
Fig. H-1385, Screwed..each	10.50	14.00	17.00	20.00	30.00	40.00
No. H-1386, Flanged... "	12.50	16.50	20.00	23.00	33.00	43.00

Screwed end valves will be furnished unless otherwise specified.

For general description, see page 368.
For end to end dimensions, see page 369.
Templates for drilling, see page 196.
Price list for drilling, see page 413.
For price list of extra Jenkins Discs, see page 383.

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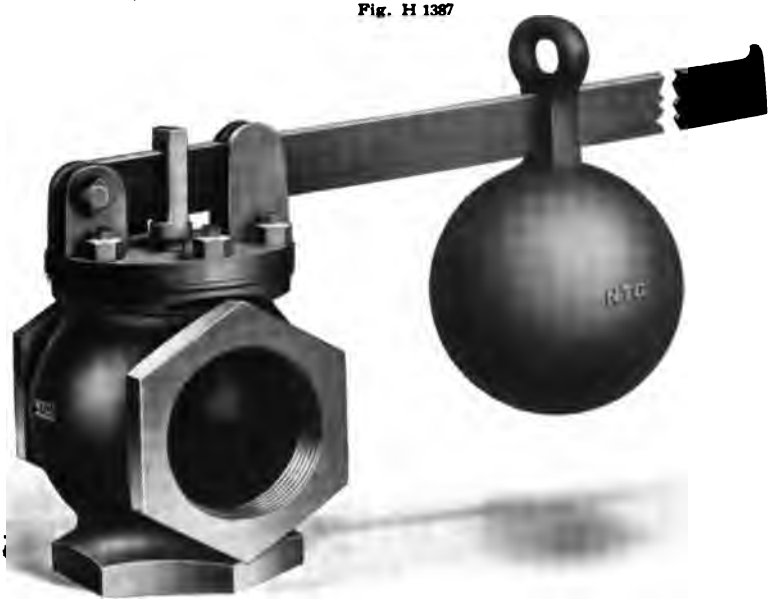
STANDARD IRON BODY SAFETY VALVES

Brass Mounted

For Steam Working Pressures up to 100 Pounds

Fig. H 1387



SCREWED

Size .....inches	¾	1	1¼	1½	2	2½	3
Fig. H-1387.....each	3.60	4.00	5.00	5.80	7.80	13.25	17.25
Size .....inches	3½	4	4½	5	6	7	8
Fig. H-1387.....each	23.00	28.75	34.50	41.50	57.75	93.50	132.00

FLANGED

Size.....inches	2	2½	3	3½	4	4½	5	6	7	8
No. H-1388 .....each	10.25	16.00	21.50	27.50	34.00	40.00	48.00	65.00	100.00	140.00
Diam. of Flanges....	6	7	7½	8½	9	9¼	10	11	12½	13½

WITH JENKINS DISC

Size .....inches	2	2½	3	3½	4	5	6
No. H-1389, Screwed.....each	10.25	16.75	22.00	31.00	38.00	55.00	73.00
No. H-1390, Flanged .... "	12.25	19.00	25.50	34.00	41.50	62.00	80.00

Screwed end valves will be furnished unless otherwise specified.
We do not recommend the use of screwed end valves above 6 inches.
For general description, see page 368. For center to face dimensions, see page 369.
Templates for drilling, see page 196. Price list for drilling, see page 413.
For price list of extra Jenkins Discs, see page 383.

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STANDARD IRON BODY EXPANSION JOINTS

Screwed

Brass Sleeves

For Steam Working Pressures up to 125 Pounds

Fig H-1391

STANDARD TRAVERSE

Size.....inches	2	2½	3	3½	4	5
Traverse.....inches	2½	2½	2¾	3	3¼	4
Fig. H-1391.....each	7.00	8.00	10.00	14.00	18.00	38.00
Size.....inches	6	7	8	9	10	12
Traverse.....inches	5	6	7	7	7	8
Fig. H-1391.....each	45.00	70.00	100.00	110.00	160.00	225.00

SPECIAL TRAVERSE (No. H-1392)

Traverse	Size, ins.	2	2½	3	3½	4	5	6	7	8
6 inches	Each	11.00	13.00	17.50	25.00	30.00	45.00	55.00	....	....
10 "	"	16.00	19.00	25.00	35.00	42.00	62.00	80.00	100.00	140.00
12 "	"	18.50	22.00	29.00	40.00	48.00	70.00	92.50	115.00	160.00
14 "	"	21.00	25.00	33.00	45.00	54.00	78.00	105.00	130.00	....
16 "	"	23.50	28.00	37.00	50.00	60.00	86.00	117.50	145.00	....
18 "	"	26.00	31.00	41.00	55.00	66.00	94.00	130.00	....	....

Screwed end furnished unless otherwise ordered.

The expansion will average about one inch in fifty feet of pipe.

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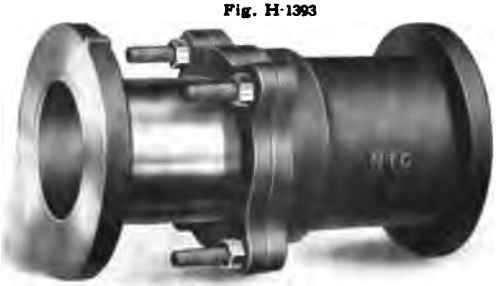
STANDARD IRON BODY EXPANSION JOINTS

Flanged

Brass Sleeve

For Steam Working Pressures up to 125 Pounds

Fig. H-1393



STANDARD TRAVERSE

Size.....inches	2	2½	3	3½	4	5
Traverse.....inches	2½	2½	2¾	3	3¼	4
Diameter of Flanges..... "	6	7	7½	8½	9	10
Fig. H-1393 .....each	15.00	16.00	18.50	25.00	30.00	48.00
Size .....inches	6	7	8	9	10	12
Traverse.....inches	5	6	7	7	7	8
Diameter of Flanges..... "	11	12½	13½	15	16	19
Fig. H-1393.....each	55.00	80.00	110.00	120.00	175.00	250.00

SPECIAL TRAVERSE (No. H-1394)

Traverse	Size.....inches	2	2½	3	3½	4	5
6 inches	Each.....	18.00	20.00	25.00	35.00	40.00	55.00
10 "	"	23.00	26.00	32.50	45.00	52.00	72.00
12 "	"	25.50	29.00	36.50	50.00	58.00	80.00
14 "	"	28.00	32.00	40.50	55.00	64.00	88.00
16 "	"	30.50	35.00	44.50	60.00	70.00	96.00
18 "	"	33.00	38.00	48.50	65.00	76.00	104.00

Traverse	Size.....inches	6	7	8	10	12	.....
6 inches	Each.....	65.00	.....	.....	.....	.....	.....
10 "	"	90.00	112.00	150.00	225.00	300.00	.....
12 "	"	102.50	127.00	170.00	255.00	350.00	.....
14 "	"	115.00	142.00	190.00	285.00	400.00	.....
16 "	"	127.50	157.00	210.00	315.00	.....	.....
18 "	"	140.00	172.00	230.00	350.00	.....	.....

Prices for 14, 15 and 16 inch quoted on application.
Screwed end furnished unless otherwise ordered.
The expansion will average about 1 inch in fifty feet of pipe.
Templates for drilling, see page 196.
Price list for drilling, see page 413.

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STANDARD IRON FOOT VALVES

With Strainers

Fig. H-1395

Size.....inches	¾	1	1¼	1½	2	2½	3	3½
Fig. H-1395, Screwed, Painted.....	.42	.44	.52	.65	.90	1.30	1.85	2.60
No. H-1396, Screwed, Galvanized...	.60	.60	.75	1.00	1.45	2.00	2.70	3.90
No. H-1397, Flanged, Painted.....	....	....	....	....	....	....	2.50	3.25
No. H-1398, Flanged, Galvanized...	....	....	....	....	....	....	3.50	4.50
Diameter of Flanges .....inches	....	....	....	....	....	....	7½	8⅝
Largest Outside Diameter... "	4⅛	4⅛	4⅜	5 1/16	5 5/16	6 5/16	8⅛	9 7/16

Size.....inches	4	4½	5	6	7	8	10	12
Fig. H-1395, Screwed, Painted.....	2.80	4.00	4.25	7.00	16.00	16.00	29.00	58.00
No. H-1396, Screwed, Galvanized...	4.25	6.25	6.50	10.00	30.00	30.00	50.00	90.00
No. H-1397, Flanged, Painted.....	3.60	4.75	5.00	8.00	17.00	17.00	30.00	60.00
No. H-1398, Flanged, Galvanized...	5.50	7.25	7.50	12.00	32.00	32.00	52.00	95.00
Diameter of Flanges .....inches	9	9¼	10	11	12½	13½	16	19
Largest Outside Diameter... "	9 7/16	9 7/16	12½	12½	13⅛	15¼	19 5/8	20 1/4

Screwed end valves will be furnished unless otherwise specified.

For drilling templates, see page 196.

Price list for drilling, see page 413.

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IRON BODY GATE OR STRAIGHT-WAY VALVES

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STANDARD IRON BODY GATE VALVES

WEDGE GATE PATTERN — Sizes 2 inches to 24 inches Inclusive

For Steam Working Pressures up to 125 Pounds

Fig. H-1450

Fig. H-1451

Fig. H-1452

Fig. H-1453

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STANDARD IRON BODY GATE VALVES

WEDGE GATE PATTERN — Sizes 2 inches to 30 inches inclusive

TABLE OF DIMENSIONS

Size.....inches	A	2	2½	3	3½	4	4½	5	6	7	8	9	10	12	14	15	16	18	20	22	24	26	28	30
End to End, Screwed End.....ins.	B	5 7/16	5 7/8	6 1/8	6 1/2	6 7/8	7 1/4	7 5/16	7 3/4	8 1/4	8 11/16	9 1/4	9 7/8	11 1/8	...	...	...	...	...	...	...	...	...	...
Face to Face, Flanged End..... "	C	7	7½	8	8½	9	9½	10	10½	11	11½	12	13	14	15	15	16	17	18	19	20	23	26	30
End to End, Hub End without By-Pass "	D	8½	...	9	...	10¼	...	10½	10¾	10¾	12	...	12¾	13½	14½	...	16	17	17	17½	18	22	26	30
End to End, Hub End with By-Pass "	...	...	...	...	...	...	...	...	12¼	12½	14	...	15	16	16½	...	19	20	21	21	22	22	26	30
Diameter of Flanges.... "	E	6	7	7½	8½	9	9¼	10	11	12⅛	13½	15	16	19	21	22¼	23½	25	27½	29½	32	34¼	36½	38¾
Thickness of Flanges... "	F	5/8	11/16	3/4	13/16	15/16	15/16	15/16	1	1 1/16	1 1/8	1 1/8	1 3/16	1 1/4	1 3/8	1 3/8	1 7/16	1 9/16	1 11/16	1 13/16	1 7/8	2	2 1/16	2 1/8
Diameter of Bolt Circle. "	G	4¾	5½	6	7	7½	7¾	8½	9½	10¾	11¾	13½	14¼	17	18¾	20	21½	22¾	25	27¼	29½	31¾	34	36
No. of Bolts.....	...	4	4	4	4	4	8	8	8	8	8	12	12	12	12	16	16	16	20	20	20	24	28	28
Size of Bolts.....ins.	...	5/8	5/8	5/8	5/8	3/4	3/4	3/4	3/4	3/4	3/4	3/4	7/8	7/8	1	1	1	1 1/8	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 3/8
Inside Diameter of Hub. "	H	3¼	...	4¾	...	5⅝	...	6¾	7⅞	9	10	...	12¼	14⅜	16½	...	18⅜	20⅝	23	25⅛	27¼	29⅜	31½	34
End to End of Pipe in Hub End, without By-Pass..... "	...	3	...	3½	...	4¼	...	4¼	4¾	4¾	5	...	5¾	6½	7¼	...	8	9	9	9½	10	14	17	21
End to End of Pipe in Hub End, with By-Pass..... "	...	...	...	...	...	...	...	...	6¼	6½	7	...	8	9	9½	...	11	12	13	13	14	14	17	21
Center of Run to Top of Stem, N. R. S. "	J	11⅜	12⅞	14¼	15¼	16¼	17⅜	19	20¾	23	26	28	30¼	35¼	38¾	41¼	44	50¼	52½	55½	62	65⅞	70	75½
Center of Run to Top of Stem, O. S. Y., Open.. "	...	14	15⅞	18½	20⅜	23½	24⅜	28	31⅜	37¼	41	44¼	49½	57½	62⅜	69⅜	71½	80⅜	91	100	109	117½	125	133
Center of Run to Top of Stem, O. S. Y., Closed. "	K	11⅜	13	15¼	17	19¼	20	22½	25¼	29¾	32¼	34⅜	39	44⅜	48½	53¼	55	62	70	77	84	90½	96	102
No. of Turns Required to Open.....	...	7	8	10½	10½	8¾	9	11	12⅜	15¼	16	18¾	20½	24½	28¾	31½	32¼	37½	42¼	46	50	65	80	92½
Diam. of Hand Wheel...ins.	L	5½	5½	6½	7½	9	9	10	10	12	14	14	16	18	20	20	22	24	24	27	30	30	36	36
Size of By-Pass..... "	...	...	...	...	...	...	...	...	1¼	1¼	1½	1½	1½	2	2	2	3	3	4	4	4	4	4	4
Center of Valve to Outside of By-Pass "	N	...	...	...	...	...	...	...	11⅜	12½	14⅛	14⅜	15½	18½	19½	21	22⅜	24	27⅜	29	30½	32	33	34

For dimensions of double disc valves, see pages 396, 397.

National Tube Co. NTC Pittsburgh, Pa., U.S.A.

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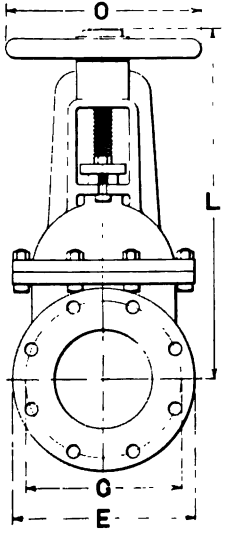
STANDARD IRON BODY GATE VALVES

DOUBLE DISC PATTERN—Sizes 2 inches to 12 inches Inclusive

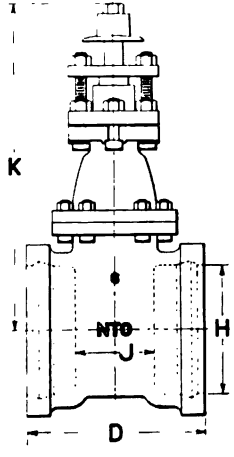
For Steam Working Pressures up to 125 Pounds

Fig. H-1454



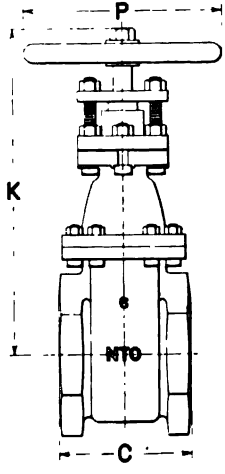
No. 1

Fig. H-1455



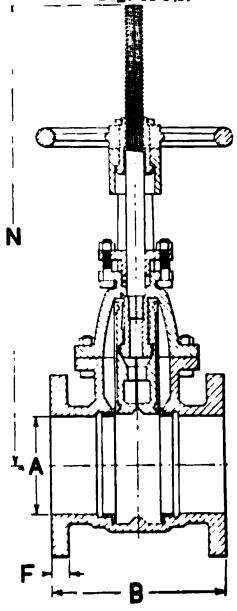
No. 2

Fig. H-1456



No. 3

Fig. H-1457



No. 4

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STANDARD IRON BODY GATE VALVES

DOUBLE DISC PATTERN—Sizes 2 inches to 12 inches Inclusive

TABLE OF DIMENSIONS

Size of run.....inches	A	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
Face to face of flanged end.....inches	B	7	7½	8	8½	9	9½	10	10½	11	11½	12	13	14
Length of screwed end..... "	C	5 7/16	5 7/8	6 1/8	6½	6¾	7 1/4	7 3/8	7⅞	9	9⅛	10½	11 9/16	12
Length of hub end..... "	D	7	....	7 7/8	....	9 3/8	....	10½	11¾	12¾	13	....	14¾	15
Diameter of flange..... "	E	6	7	7½	8½	9	9¼	10	11	12½	13½	15	16	19
Thickness of flange..... "	F	5/8	11/16	¾	13/16	15/16	15/16	15/16	1	1 1/16	1 1/8	1 1/8	1 3/16	1¼
Diameter of bolt circle..... "	G	4¾	5½	6	7	7½	7¾	8½	9½	10¾	11¾	13¼	14¼	17
Number of bolts..... ..... "	....	4	4	4	4	4	8	8	8	8	8	12	12	12
Diameter of bolts..... "	....	5/8	5/8	5/8	5/8	¾	¾	¾	¾	¾	¾	¾	⅞	⅞
Inside diameter of hub..... "	H	3 3/16	....	4 1/4	....	5¾	....	6⅞	7⅞	8⅞	10	....	12	14¼
End to end of pipe in hub..... "	J	2½	....	2 7/8	....	3⅞	....	4½	4¾	5¼	5¼	....	7	7¼
Center of run to top of stem, N. R. S. "	K	8 7/16	10 3/8	11 5/16	12½	15¼	15¾	18 3/8	20	22	24½	26	29	32¼
Center of run to top of stem, O. S. Y. closed..... "	L	8¾	10 1/16	11 11/16	13 5/16	14 11/16	16 1/8	18 5/8	21 3/8	24	26	30 3/8	34 3/4	38¼
Center of run to top of stem, O. S. Y. open..... "	N	11	12 7/8	15	17	19	21	24	27¾	31½	34½	40	45½	51
Diameter of handwheel, O. S. Y.... "	O	4¾	6	6	8	9	9	12	12	14	14	14	15½	15½
Diameter of handwheel, N. R. S.... "	P	4¾	6	6	6	9	10	11	12	13	14	14	15½	15½

For dimensions of solid wedge valves, see pages 394, 395

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NAMES OF PARTS

STANDARD IRON BODY GATE VALVES

Wedge Gate Pattern

Fig. H-1458

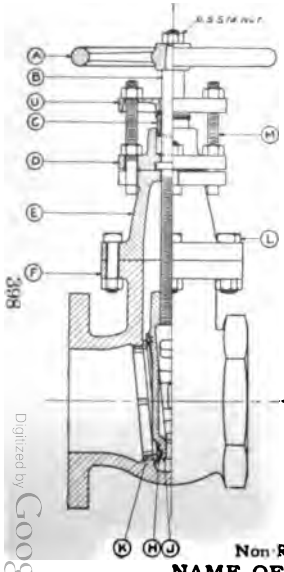


Fig. H-1459

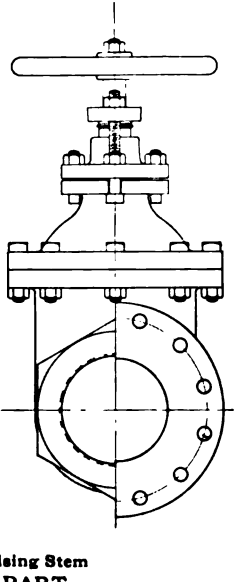


Fig. H-1460

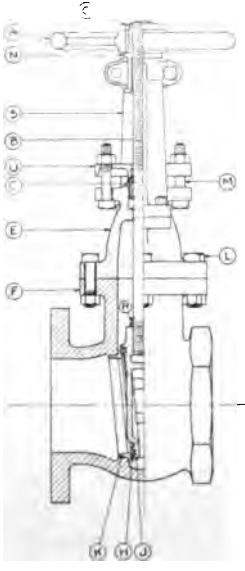
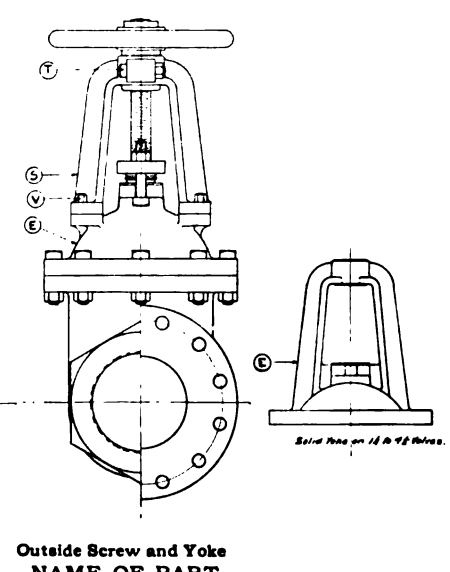


Fig. H-1461



Non-Rising Stem

NAME OF PART	A	B	C	D	E	F	H	J	K	L	M	U
Hand Wheel	A											
Stem		B										
Gland			C									
Stuffing Box				D								
Bonnet					E							
Body						F						
Wedge Ring							H					
Wedge								J				
Seat Ring									K			
Bonnet Bolts										L		
Gland Bolts											M	
Gland Plate												U

Outside Screw and Yoke

NAME OF PART	A	B	C	E	F	H	J	K	L	M	N	O	R	S	T	U	V
Hand Wheel	A																
Stem		B															
Gland			C														
Bonnet				E													
Body					F												
Wedge Ring						H											
Wedge							J										
Seat Ring								K									
Bonnet Bolts									L								
Gland Bolts										M							
Yoke Nut											N						
Lock Nut												O					
Packing Ring													R				
Yoke														S			
Yoke Bolts															T		
Gland Plate																U	
Bonnet Cap Screws																	V

National Tube Co. NTC Pittsburgh, Pa., U.S.A.

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STANDARD IRON BODY GATE VALVES

Double Disc Pattern

Fig. H-1462

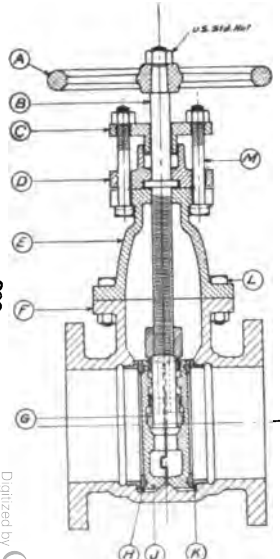
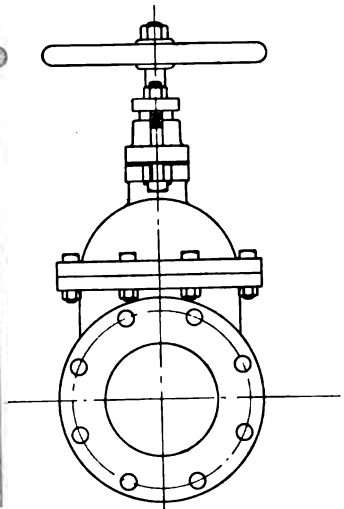


Fig. H-1463



Non-Rising Stem

A	B	C	D	E	F	G	H	J	K	L	M
Hand Wheel	Stem	Gland	Stuffing Box	Bonnet	Body	Sleeve	Disc Ring	Disc	Seat Ring	Bonnet Bolts	Gland Bolts

NAME OF PART

Fig. H-1464

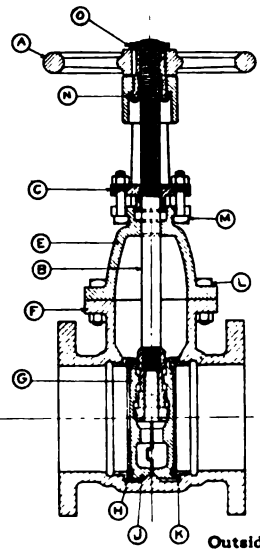
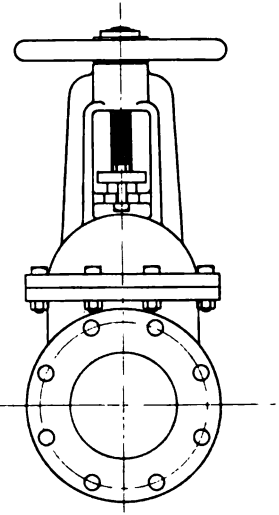


Fig. H-1465



Outside Screw and Yoke

A	B	C	E	F	G	H	J	K	L	M	N	O
Hand Wheel	Stem	Gland	Bonnet	Body	Sleeve	Disc Ring	Disc	Seat Ring	Bonnet Bolts	Gland Bolts	Yoke Nut	Lock Nut

NAME OF PART

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STANDARD IRON BODY GATE VALVES

Wedge Gate Pattern. Brass Mounted

For Steam Working Pressures up to 125 Pounds

Fig. H-1466

Non-Rising Stem

Showing Flanged End Construction

Showing Hub End Construction

SECTIONAL VIEW

The above sectional view of valve illustrates both flanged and hub end construction.

These valves are so constructed as to admit of being packed under pressure when wide open.

For general description, see page 368.
For table of dimensions, see pages 394, 395.
For names of parts, see page 398.
For list, see pages 404, 408.

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STANDARD IRON BODY GATE VALVES

Wedge Gate Pattern. Brass Mounted

For Steam Pressures up to 125 Pounds

Fig. H-1467

Outside Screw and Yoke

Showing Flanged End Construction

Showing Hub End Construction

SECTIONAL VIEW

The above sectional view of valve illustrates both flanged and hub end construction.

These valves are so constructed as to admit of being packed under pressure when wide open.

The position of the outside screw indicates whether the valve is open, partially open or closed.

For general description, see page 368.
For table of dimensions, see pages 394, 395.
For names of parts, see page 398.
For list, see page 414.

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STANDARD IRON BODY GATE VALVES

Double Disc Pattern. Brass Mounted

For Steam Working Pressures up to 125 Pounds

Fig. H-1468
Non-Rising Stem

SECTIONAL VIEW

The gland and stuffing box are bolted to the bonnet which is provided with slots to permit easy adjustment.

The bolts, when injured, can be readily replaced by using ordinary machine bolts and chasing longer threads thereon to accommodate both gland and stuffing box.

Bolts are also used for bonnet flange.

These valves are so constructed as to admit of being packed under pressure when wide open.

For general description, see page 368.
For table of dimensions, see pages 396, 397.
For names of parts, see page 399.
For list, see pages 405, 406.

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STANDARD IRON BODY GATE VALVES

Double Disc Pattern. Brass Mounted

For Steam Working Pressures up to 125 Pounds

Fig. H-1469
Outside Screw and Yoke

SECTIONAL VIEW

These valves are so constructed as to admit of being packed under pressure when wide open.

The position of the outside screw indicates whether the valve is open, partially open, or closed.

For general description, see page 368.
For table of dimensions, see pages 396, 397.
For names of parts, see page 399. For list, see page 415.

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STANDARD IRON BODY GATE VALVES

Wedge Gate Pattern. Brass Mounted
For Steam Working Pressures up to 125 Pounds

Fig. H-1470
Non-Rising Stem

SCREWED AND FLANGED

Size.....inches	2	2½	3	3½	4	4½	5	6	7	8
Screwed.....each	10.00	12.00	15.00	18.00	20.00	23.00	25.00	30.00	45.00	55.00
Flanged ..... "	10.00	12.00	15.00	18.00	20.00	23.00	25.00	30.00	45.00	55.00
E. to E., Screwed .....inches	5 7/16	5 7/8	6 1/8	6 1/4	6 3/8	7 1/4	7 1/16	7 3/4	8 1/4	8 1/2
F. to F., Flanged..... "	7	7½	8	8½	9	9½	10	10½	11	11½
Diameter Flanges..... "	6	7	7½	8½	9	9¼	10	11	12½	13½

Size.....inches	9	10	12	14	15	16	18	20	22	24
Screwed.....each	80.00	90.00	125.00	.....	.....	.....	.....	.....	.....	.....
Flanged ..... "	80.00	90.00	125.00	190.00	240.00	275.00	375.00	425.00	525.00	600.00
E. to E., Screwed .....inches	9¼	9 3/8	11 5/8	.....	.....	.....	.....	.....	.....	.....
F. to F., Flanged..... "	12	13	14	15	15	16	17	18	19	20
Diameter Flanges..... "	15	16	19	21	22¼	23½	25	27½	29½	32

In sizes 12 inches and smaller, screwed end valves will be furnished unless otherwise specified.

Regularly furnished with brass stems.

These valves are so constructed as to admit of being packed under pressure when wide open.

We do not recommend the use of screwed end valves above 6 inches.

We recommend the use of by-pass on valves 16 inches and larger.

For general description, see page 368. For table of dimensions, see pages 394, 395.
For names of parts, see page 398. For sectional view, see page 400.
Templates for drilling, see page 196. Price list for drilling, see page 413.

STANDARD IRON BODY GATE VALVES

Double Disc Pattern. Brass Mounted
For Steam Working Pressures up to 125 Pounds

Fig. H-1471
Non-Rising Stem

SCREWED

Size .....inches	2	2½	3	3½	4	4½	5
Each	10.00	12.00	15.00	18.00	20.00	23.00	25.00
End to End.....inches	5 7/16	5 7/8	6 1/8	6½	6 3/4	7 1/4	7 3/8
Size .....inches	6	7	8	9	10	12	....
Each	30.00	45.00	55.00	80.00	90.00	125.00	....
End to End.....inches	7 7/8	9	9 1/8	10½	11 9/16	12	....

Screwed end valves will be furnished unless otherwise specified.
Regularly furnished with brass stems.
Above valves can also be furnished in wedge pattern, as shown on page 404.
These valves are so constructed as to admit of being packed under pressure when wide open.
We do not recommend the use of screwed end valves above 6 inches.
For general description, see page 368. For tables of dimensions, see pages 396, 397.
For names of parts, see page 399. For sectional view, see page 402.

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STANDARD IRON BODY GATE VALVES

Double Disc Pattern. Brass Mounted

For Steam Working Pressures up to 125 Pounds

Fig. H-1472
Non-Rising Stem

FLANGED

Size ..... inches	2	2½	3	3½	4	4½	5
Each	10.00	12.00	15.00	18.00	20.00	23.00	25.00
Diameter of Flanges ..... inches	6	7	7½	8½	9	9½	10
Face to Face ..... "	7	7½	8	8½	9	9½	10
Size ..... inches	6	7	8	9	10	12	
Each	30.00	45.00	55.00	80.00	90.00	125.00	
Diameter of Flanges ..... inches	11	12½	13½	15	16	19	
Face to Face ..... "	10½	11	11½	12	13	14	

Screwed end valves will be furnished unless otherwise specified.
Regularly furnished with brass stems.
Can also furnish in wedge gate pattern, as shown on page 404.
These valves are so constructed as to admit of being packed under pressure when wide open.

For general description, see page 368.
For table of dimensions, see pages 396, 397.
For names of parts, see page 399.
For interior construction, see page 402.
Templates for drilling, see page 196.
Price list for drilling, see page 413.

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STANDARD IRON BODY GATE VALVES

Wedge Gate and Double Disc Pattern

Non-Rising Stem with By-Pass. Brass Mounted

For Steam Working Pressures up to 125 Pounds

Fig. H-1473
Non-Rising Stem

FLANGED OR HUB END

Size.....ins.	8	9	10	12	14	16	18	20	22	24
Each.....	Prices on Application			200.00	265.00	350.00	450.00	525.00	625.00	725.00
Diam. of Flgs..ins.	13½	15	16	19	21	23½	25	27½	29½	32
Size of By-Pass. "	1½	1½	1½	2	2	3	3	4	4	4

Regularly furnished with brass stem.

Can furnish double disc pattern only in sizes 8 inch to 12 inch inclusive, but the wedge pattern such as shown on page 404 can be furnished in all above sizes.

The 8 inch and 9 inch double disc valves and all sizes of wedge pattern valves have gate valve by-passes.

These valves are so constructed as to admit of being packed under pressure when wide open.

We recommend the use of by-pass on valves 16 inches and larger.

For general description, see page 368.
For tables of dimensions, see pages 394, 395, 396, 397.
For interior construction, see pages 400, 402.
Templates for drilling, see page 196.
Price list for drilling, see page 413.

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STANDARD IRON BODY GATE VALVES

Wedge Gate and Double Disc Patterns
Non-Rising Stem. Water Gates. Brass Mounted
Open to the Left
For Water Working Pressures up to 125 Pounds

Fig. H-1474
Double Disc Pattern

HUB END

Size.....inches	2	3	4	5	6	7	8	10
Each.....	10.00	15.00	20.00	25.00	30.00	45.00	55.00	90.00
Size.....inches	12	14	16	18	20	22	24	....
Each.....	125.00	190.00	275.00	375.00	425.00	525.00	600.00	....

Valves will be furnished with stems turning to left to open, unless otherwise ordered. Regularly furnished with brass stem.

Can furnish double disc pattern in sizes up to and including 12 inches; wedge gate pattern in all sizes listed.

Can furnish with ends to fit Matheson joint pipe at a special price. See page 358.

Valves 22 inches and smaller have 2 inch square on top of stem; 24 inches and larger have 3 inch square on top of stem.

These valves are so constructed as to admit of being packed under pressure when wide open. We recommend the use of by-pass on valves 16 inches and larger.

For general description, see page 368.
For tables of dimensions, see pages 394, 395, 396, 397.
For names of parts, see pages 398, 399.
For interior construction, see pages 400, 402.

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STANDARD IRON BODY GATE VALVES

Wedge Gate and Double Disc Patterns
Non-Rising Stem. Water Gates. Brass Mounted
Open to the Left. For Working Pressures up to 125 Pounds

Fig. H-1475
Double Disc Pattern

HUB AND SPIGOT

Size ..... inches	4	5	6	7	8	10	12
Fig. H-1475 ..... each	22.00	27.50	33.00	49.50	60.50	99.00	137.50
Size ..... inches	14	16	18	20	22	24	....
Fig. H-1475 ..... each	228.00	330.00	450.00	510.00	630.00	720.00	....

SPIGOT (Both Ends)

Size ..... inches	4	5	6	7	8	10	12
No. H-1476 ..... each	24.00	30.00	36.00	54.00	66.00	108.00	150.00
Size ..... inches	14	16	18	20	22	24	....
No. H-1476 ..... each	250.00	350.00	495.00	560.00	695.00	800.00	....

Regularly furnished with brass stems. Can furnish double disc pattern in sizes up to and including 12 inches. Can furnish wedge gate pattern in all sizes listed.

Valves 22 inches and smaller have 2-in. squares on top of stem. 24 inches and larger have 3-in. squares on top of stem. These valves are so constructed as to admit of being packed under pressure when wide open. We recommend the use of by-pass on valves 16 inches and larger. For general description, see page 368. For names of parts, see pages 398, 399. For interior construction, see pages 400, 402.

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STANDARD IRON BODY GATE VALVES

Wedge Gate and Double Disc Patterns
Non-Rising Stem. Converse Joint. Brass Mounted
For Working Pressures up to 125 Pounds

Fig. H-1477
Double Disc Pattern

Size, inches	2	2½	3	3½	4	4½	5	6	7	8
Each.....	10.00	12.00	15.00	18.00	20.00	23.00	25.00	30.00	45.00	55.00
Size, inches	9	10	12	14	16	18	20	22	24	....
Each.....	80.00	90.00	125.00	190.00	275.00	375.00	425.00	525.00	600.00	....

Regularly furnished with brass stems.
Can furnish double disc patterns in sizes up to and including 12 inches.
Can furnish wedge gate pattern in all sizes listed.
Can furnish with ends to fit Matheson joint pipe at a special price. See page 358.
Valves 22 inches and smaller have 2 inch squares on top of stem; 24 inches and larger have 3 inch squares on top of stem.
These valves are so constructed as to admit of being packed under pressure when wide open.
We recommend the use of by-pass on valves 16 inches and larger.
For general description, see page 368.
For names of parts, see pages 398, 399.
For interior construction, see pages 400, 402.

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STANDARD IRON BODY GATE VALVES

Wedge Gate and Double Disc Patterns
Quick Opening. Brass Mounted
For Steam Working Pressures up to 125 Pounds

Fig. H-1478
Double Disc Pattern

SCREWED

Size.....inches	2	2½	3	3½	4	4½	5
Fig. H-1478.....each	16.00	18.00	22.00	25.00	27.00	30.00	34.00
Size.....inches	6	7	8	9	10	12	....
Fig. H-1478.....each	40.00	57.00	69.00	96.00	110.00	150.00	....

FLANGED

Size.....inches	2	2½	3	3½	4	4½	5	6
No. H-1479.....each	16.00	18.00	22.00	25.00	27.00	30.00	34.00	40.00
Diameter of Flanges....inches	6	7	7½	8½	9	9¼	10	11
Size.....inches	7	8	9	10	12	14	15	16
No. H-1480.....each	57.00	69.00	96.00	110.00	150.00	225.00	275.00	325.00
Diameter of Flanges....inches	12½	13½	15	16	19	21	22¼	23½

In sizes 12 inches and smaller, screwed end valves will be furnished unless otherwise specified. Regularly furnished with brass stem. Can furnish double disc pattern up to and including 12 inches. Can furnish wedge gate pattern in all sizes shown.

The construction of these valves is such that the gates can be locked in any desired position. We do not recommend the use of screwed end valves above 6 inches.

For general description, see page 368. For table of dimensions, see pages 394, 395, 396, 397. Templates for drilling, see page 196. Price list for drilling, see page 413.

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STANDARD IRON BODY ANGLE GATE VALVES

Double Disc Pattern

N. R. S. and O. S. & Y. Brass Mounted

For Working Pressures up to 125 Pounds

Fig. H-1481

Non-Rising Stem

SCREWED ENDS

Prices on application.
Made to order only, with either screwed or flanged ends.
Screwed end valves furnished unless otherwise ordered.
N. R. S. valves regularly furnished with brass stems.
O. S. & Y. valves regularly furnished with steel stems; brass stems can be furnished at a special price.
These valves are so constructed as to admit of being packed under pressure when wide open.
We do not recommend the use of screwed end valves above 6 inches.
For general description, see page 368.
For names of parts, see page 399.
For interior construction, see pages 402, 403.

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DRILLING STANDARD FLANGED VALVES

PRICE LIST

Size Inches	Price Drilling Valves with Two Flanges, except Angle Valves Each	Price Drilling Angle Valves Each	Price Drilling Cross Valves and Cross Safety Valves Each
2	.75	1.25	1.50
2½	.75	1.25	1.50
3	.75	1.25	1.50
3½	1.00	1.50	2.00
4	1.25	1.75	2.50
4½	1.50	2.00	3.00
5	1.50	2.00	3.00
6	1.75	2.50	3.50
7	2.25	3.00	4.50
8	2.25	3.00	4.50
9	2.50	3.50	5.00
10	2.50	3.50	5.00
12	3.50	5.00	7.00
14	4.00	.....	.....
15	4.50	.....	.....
16	5.00	.....	.....
18	6.00	.....	.....
20	7.50	.....	.....
22	9.00	.....	.....
24	10.00	.....	.....

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STANDARD IRON BODY GATE VALVES

Wedge Gate Pattern. Brass Mounted
For Steam Working Pressures up to 125 Pounds

Fig. H-1481
Outside Screw and Yoke

SCREWED AND FLANGED

Size ..... inches	2	2½	3	3½	4	4½	5	6	7	8
No. H-1482, Screwed ..... each	18.00	20.00	23.00	28.00	33.00	40.00	46.00	55.00	70.00	90.00
Fig. H-1483, Flanged ..... "	18.00	20.00	23.00	28.00	33.00	40.00	46 00	55 00	70 00	90.00
E. to E., Screwed ..... inches	5 7/16	5 7/8	6 1/8	6 1/2	6 7/8	7 1/4	7 11/16	7 3/4	8 1/4	8 11/16
F. to F., Flanged ..... "	7	7½	8	8½	9	9½	10	10½	11	11½
Diameter Flanges ..... "	6	7	7½	8½	9	9½	10	11	12½	13½

Size ..... inches	9	10	12	14	15	16	18	20	22	24
No. H-1482, Screwed ..... each	115.00	135.00	170.00	.....	.....	.....	.....	.....	.....	.....
Fig. H-1483, Flanged ..... "	115.00	135.00	170.00	240.00	300.00	350 00	475.00	550.00	650.00	750.00
E. to E., Screwed ..... inches	9½	9 7/8	11 5/8	.....	.....	.....	.....	.....	.....	.....
F. to F., Flanged ..... "	12	15	14	15	15	16	17	18	19	20
Diameter Flanges ..... "	15	16	19	21	22½	23½	25	27½	29½	32

In sizes 12 inches and smaller, screwed end valves will be furnished unless otherwise ordered. Regularly furnished with steel stem. Brass stem can be furnished at a special price. These valves are so constructed as to admit of being packed under pressure when wide open. The position of the outside screw indicates whether the valve is open, partially open, or closed. We do not recommend the use of screwed end valves above 6 inches. We recommend the use of by-pass on valves 16 inches and larger. For general description, see page 388. For table of dimensions, see pages 394, 395. For names of parts, see page 398. For interior construction, see page 401. Templates for drilling, see page 198. Price list for drilling, see page 413.

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STANDARD IRON BODY GATE VALVES

Double Disc Pattern. Brass Mounted
For Steam Working Pressures up to 125 Pounds

Fig. H-1484
Outside Screw and Yoke

SCREWED OR FLANGED ENDS

Size .....inches	2	2½	3	3½	4	4½	5
Fig. H-1484, Screwed.....	18.00	20.00	23.00	28.00	33.00	40.00	46.00
No. H-1485, Flanged.....	18.00	20.00	23.00	28.00	33.00	.....	46.00
Size .....inches	6	7	8	9	10	12	....
Fig. H-1484, Screwed.....	55.00	70.00	90.00	115.00	135.00	170.00	....
No. H-1485, Flanged.....	55.00	70.00	90.00	115.00	135.00	170.00	....

Screwed end valves will be furnished unless otherwise specified.
Ordinarily furnished with steel stems. Extra charge for brass stems.
Can also furnish above in wedge pattern as shown on page 414.
These valves are so constructed as to admit of being packed under pressure when wide open.
The position of outside screw indicates whether the valve is open, partly open, or closed.
We do not recommend the use of screwed end valves above 6 inches.
For general description, see page 368 For table of dimensions, see pages 396, 397. For names of parts, see page 399. For interior construction, see page 403. Templates for drilling, see page 196. Price list for drilling, see page 413.

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STANDARD IRON BODY GATE VALVES

Wedge Gate and Double Disc Patterns
Outside Screw and Yoke with By-Pass. Brass Mounted
For Steam Working Pressures up to 125 Pounds

Fig. H-1486
Double Disc Pattern

FLANGED

Size . . . inches	8	9	10	12	14	16	18	20	22	24
Flanged . each	Prices on Application			245.00	315.00	425.00	550.00	650.00	750.00	875.00
Diam. of Flgs. . . ins.	13½	15	16	19	21	23½	25	27½	29½	32
Size of By-Pass . . .	1½	1½	1½	2	2	3	3	4	4	4

Ordinarily furnished with steel stems. Extra charge for brass stems.
Can furnish double disc pattern only in sizes 8 inches to 12 inches inclusive, but the wedge pattern, such as shown on page 414 can be furnished in all above sizes.
The 8 inch and 9 inch double disc valves and all sizes of the wedge pattern valves have gate valve by-passes. These valves are so constructed as to admit of being packed under pressure when wide open. The position of the outside screw indicates whether the valve is open, partially open, or closed. We recommend the use of by-pass on valves 16 inches and larger. For general description, see page 368. For table of dimensions, see pages 394, 396, 396, 397. For names of parts, see pages 398, 399. For interior construction, see pages 401, 403 Templates for drilling, see page 196. Price list for drilling, see page 413.

STANDARD IRON BODY GATE VALVES

Double Disc Pattern. Compound Screw. Half Rising Stem
Brass Mounted
For Steam Working Pressures up to 125 Pounds

Fig. H-1487
Flanged End

SCREWED, FLANGED (Fig. H-1487) OR HUB END (No. H-1488)

Size.....inches	2	2½	3	3½	4	4½	5
Each.....	12.00	15.00	19.25	22.50	25.00	28.50	31.00
Size.....inches	....	6	7	8	9	10	12
Each.....	....	37.50	46.00	67.50	94.00	105.00	143.00

Valves will be furnished with stems turning to the left to open unless otherwise ordered.
Screwed end valves will be furnished unless otherwise specified.
Regularly furnished with brass stem.
We do not recommend the use of screwed end valves above six inches.
For general descriptions, see page 368.
For face to face dimensions, see pages 396, 397.
Templates for drilling, see page 196.
Price list for drilling, see page 413.

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STANDARD IRON BODY GATE VALVES

Wedge Gate Pattern. Gear Operated
Brass Mounted
For Steam Working Pressures up to 125 Pounds
Fig. H-1489
Outside Screw and Yoke

The above cut illustrates an 18-inch standard O. S. & Y. flanged gate valve with bevel gearing. As stated on page 419, we are prepared to furnish standard medium pressure or extra heavy Iron Body Gate Valves in the various sizes equipped with bevel gearing, spur gearing, chain operating wheel, etc., and shall be glad to quote special prices on application on such sizes and kinds as we do not list. These valves are so constructed as to admit of being packed under pressure when wide open. The position of the outside screw indicates whether valve is open, partially open or closed.

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STANDARD IRON BODY GATE VALVES

Wedge Gate Pattern. Gear Operated
Brass Mounted
For Steam Working Pressures up to 125 Pounds

Fig. H-1490

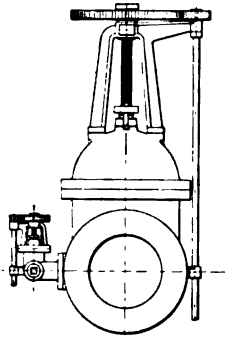


Fig. H-1491

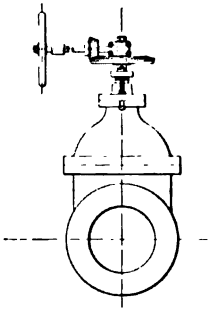
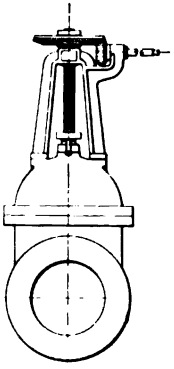


Fig. H-1492



The line cuts shown above represent a few of the various styles of gearing we are prepared to furnish for the operation of large valves. We list standard non-rising stem gate valves with spur or bevel gearing below. We can furnish almost any kind of gearing device and with operating shaft at any angle up to 30 degrees. Shall be glad to quote special prices on any kind of a valve with any kind of a gearing, not listed below.

List Prices on Standard I. B. Non-Rising Stem Gate Valves Fig. H-1491 with Spur or Bevel Gearing

Size.....inches	16	18	20	22	24
Fig. H-1491.....each	375.00	475.00	550.00	650.00	725.00
No. H-1491A, with By-Pass... "	450.00	550.00	650.00	750.00	850.00
Face to Face, Flanged.....inches	16	17	18	19	20
Diameter Flanges..... "	23½	25	27½	29½	32

In ordering, please state whether spur or bevel gearing is desired.
N. R. S. valves regularly furnished with brass stems.
O. S. & Y. valves regularly furnished with steel stems but can furnish with brass stems when desired, at a special price.
Valves above listed can also be furnished with hub ends and with square nut on operating shaft instead of wheel, at same price.
We recommend the use of by-pass on valves 16 inches and larger.
For general description, see page 368.
For interior construction, see pages 400, 401.
Templates for drilling, see page 196.
Price list for drilling, see page 413.

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STANDARD ALL IRON GATE VALVES

Wedge Gate and Double Disc Patterns
N. R. S. and O. S. & Y.
For Gas, Acids, etc.

Fig. H-1493
Double Disc Pattern, N. R. S.

SCREWED, (up to 12" Inc.) FLANGED, AND HUB END

Size....inches	2	2½	3	3½	4	4½	5	6	7	8
Fig. H-1493, Non-Rising Stem.....each	10.00	12.00	15.00	18.00	20.00	23.00	25.00	30.00	45.00	55.00
No. H-1494, Outside Screw & Yoke "	18.00	20.00	23.00	28.00	33.00	40.00	46.00	55.00	70.00	80.00

Size.....inches	9	10	12	14	15	16	18	20	22	24
Fig. H-1493, Non-Rising Stem.....each	80.00	90.00	125.00	190.00	240.00	275.00	375.00	425.00	525.00	600.00
No. H-1494, Outside Screw & Yoke.. "	115.00	135.00	170.00	240.00	300.00	350.00	475.00	550.00	650.00	750.00

In sizes 12 inches and smaller, screwed end valves will be furnished unless otherwise specified. Can furnish double disc pattern in sizes up to and including 12 inches. Can furnish wedge gate pattern in all sizes listed. These valves are so constructed as to admit of being packed under pressure when wide open. We do not recommend the use of screwed end valves above 6 inches. We recommend the use of by-pass on valves 16 inches and larger. For general description, see page 368. See pages 394, 395, 396, 397 for table of dimensions. For names of parts, see pages 398, 399. For interior construction, see pages 400, 401, 402, 403. Templates for drilling, see page 196. Price list for drilling, see page 413.

STANDARD IRON BODY GATE VALVES

Wedge Gate and Double Disc Patterns
With Indicator
Open to the Left. Non-Rising Stem. Brass Mounted
For Steam Working Pressures up to 125 Pounds

Fig. H-1496
Double Disc Pattern

SCREWED AND FLANGED

Size.....inches	2	2½	3	3½	4	4½	5	6
No. H-1495, Screwed	15.00	18.00	22.00	27 00	30 00	34.00	36.00	44.00
Fig. H-1496, Flanged.....	15.00	18 00	22.00	27.00	30.00	34.00	36.00	44.00
Size.....inches	**7**	**8**	**9**	**10**	**12**	**14**	**15**	**16**
No. H-1495, Screwed	60.00	75.00	100 00	115.10	155.00	.....	.....	.....
Fig. H-1496, Flanged.	60.00	75.00	100.00	115.00	155.00	225.00	275.00	325.00

In sizes 12 inches and smaller, screwed end valves furnished unless otherwise ordered. Regularly furnished with brass stem. Can furnish double disc pattern in sizes up to and including 12 inch. Can furnish wedge gate pattern in all sizes above listed. These valves are so constructed as to admit of being packed under pressure when wide open. The Indicator shows the position of the gates in the valve body. It is substantially constructed of brass and malleable iron. We do not recommend the use of screwed end valves above 6 inches. We recommend the use of by-pass on valves 16 inches and larger. For general description, see page 368. For table of dimensions, see pages 594, 395, 396, 397. For interior construction, see pages 400, 402. Templates for drilling, see page 196. Price list for drilling, see page 413.

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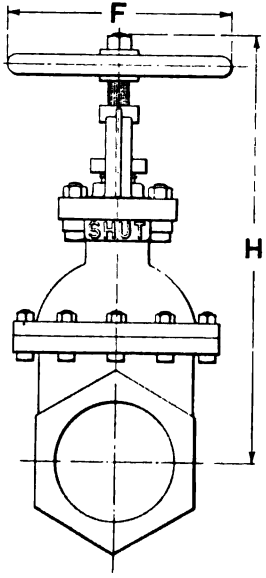
UNDERWRITERS' GATE VALVES

Indicator and Outside Screw and Yoke

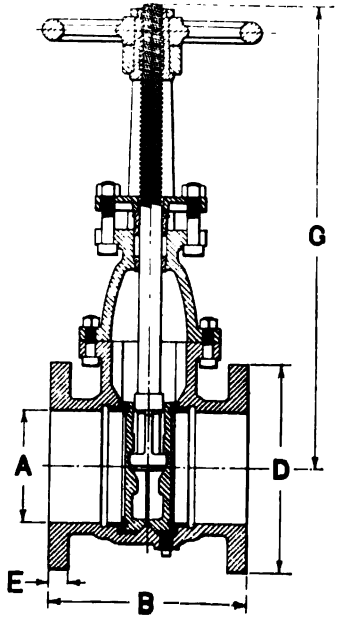
For Working Pressures up to 125 Pounds

Fig. H-1497



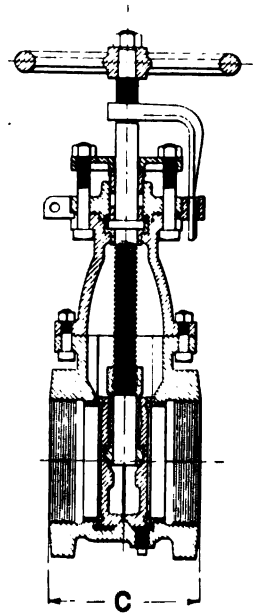
Indicator

Fig H-1498



Outside Screw and Yoke (Section)

Fig. H-1499



Indicator (Section)

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UNDERWRITERS' GATE VALVES, INDICATOR AND O. S. & Y.

TABLE OF DIMENSIONS

Size of Run.....inches		3	3½	4	5	6	7	8	10	12
Size of Run	A	3	3½	4	5	6	7	8	10	12
Face to Face of Flanges	B	8	8½	9	10	10½	11	11½	13	14
Length of Screwed End	C	6⅛	6½	6¾	7⅜	7⅞	9	9⅛	11⅝	12
Diameter of Flanges	D	7½	8½	9	10	11	12½	13½	16	19
Thickness of Flanges	E	¾	13/16	15/16	15/16	1	1 1/16	1⅛	1⅜	1¼
Diameter of Hand Wheel	F	8	9	10	11	12	13	14	15	16
Center of Run to Top of Stem, O. S. & Y., closed	G	15⅛	16½	18⅜	21¾	24⅝	27⅞	30¼	37½	43⅜
Center of Run to Top of Stem, O. S. & Y., open	....	19½	20½	22⅞	27⅜	31¼	35⅝	39	48⅝	56⅜
Center of Run to Top of Stem, N. R. S.	H	14⅜	15⅞	18¼	20⅝	22⅞	25⅛	26⅞	32¾	36⅞
Number of Turns to Open	....	10	11¾	13½	11¼	13¼	15¼	17¼	22¼	26

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NAMES OF PARTS

UNDERWRITERS' GATE VALVES

Double Disc Pattern

Fig. H-1500

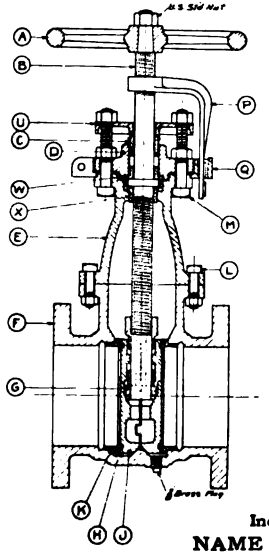
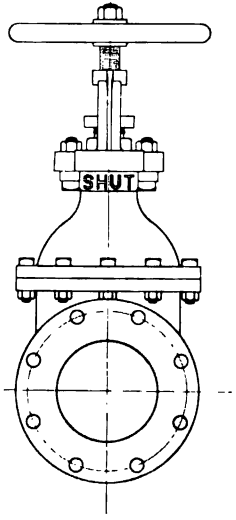


Fig. H-1501



Indicator

A	B	C	D	E	F	G	H	J	K	L	M	P	Q	U	W	X
Hand Wheel	Stem	Gland	Stuffing Box	Bonnet	Body	Sleeve	Disc Ring	Disc	Seat Ring	Bonnet Bolts	Gland Bolts	Target	Shield	Gland Plate	Stuffing Box Bushing	Bonnet Bushing

Fig. H-1502

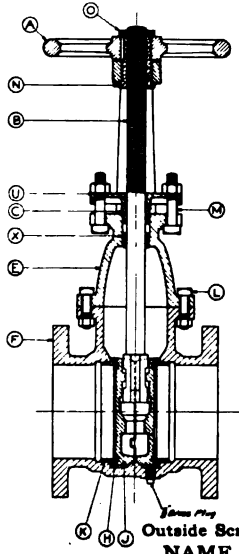
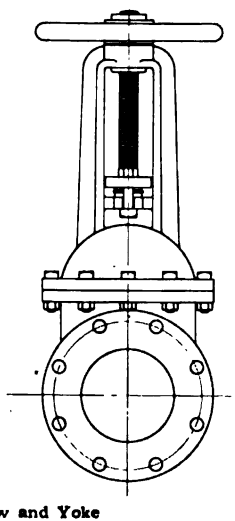


Fig. H-1503



Outside Screw and Yoke

A	B	C	E	F	H	J	K	L	M	N	O	U	X
Hand Wheel	Stem	Gland	Bonnet	Body	Disc Ring	Disc	Seat Ring	Bonnet Bolts	Gland Bolts	Yoke Nut	Lock Nut	Gland Plate	Bonnet Bushing

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UNDERWRITERS' INDICATOR GATE VALVES

Double Disc Pattern
Iron Body. Brass Mounted
Open to the Left. Non-Rising Stem
For Working Pressures up to 125 Pounds
Fig. H-1505

FLANGED END

Size.....inches	2	2½	3	3½	4	4½	5
No. H-1504. Screwed.....each	15.00	18.00	22.00	27.00	30.00	34.00	36.00
Fig. H-1505, Flanged.... "	15.00	18.00	22.00	27.00	30.00	.....	36.00
Size.....inches	6	7	8	9	10	12	.....
No. H-1504, Screwed.....each	44.00	60.00	75.00	100.00	115.00	155.00	.....
Fig. H-1505, Flanged.... "	44.00	60.00	75.00	100.00	115.00	155.00	.....

These valves will be furnished with flanged ends, faced and drilled, M. S. F. standard, unless otherwise specified, the usual charge being made for drilling.

Regularly furnished with brass stem, brass bushings in bonnet and brass gland.

Especially adapted for use on fire protection systems.

These valves are so constructed as to admit of being packed under pressure when wide open. The indicator shows the position of the gates in the valve body. It is substantially constructed of brass and malleable iron. We do not recommend the use of screwed end valves above 6 inches. For general description, see page 368.

Table of dimensions, see pages 422, 423. For names of parts, see page 424.
Templates for drilling, see page 198. Price list for drilling, see page 413.

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UNDERWRITERS' GATE VALVES

Double Disc Pattern
Iron Body. Brass Mounted
Open to the Left. Outside Screw and Yoke
For Working Pressures up to 125 Pounds

Fig. H-1507
Double Disc Pattern

Size ..... inches	2	2½	3	3½	4	4½
No. H-1506, Screwed ..... each	18.00	20.00	23.00	28.00	33.00	40.00
Fig. H-1507, Flanged ..... "	18.00	20.00	23.00	28.00	33.00	.....
Size ..... inches	**5**	**6**	**7**	**8**	**10**	**12**
No. H-1506, Screwed ..... each	46.00	55.00	70.00	90.00	135.00	170.00
Fig. H-1507, Flanged ..... "	46.00	55.00	70.00	90.00	135.00	170.00

These valves will be furnished with flanged ends, faced and drilled, M. S. F. standard, unless otherwise specified, the usual charge being made for drilling.

Regularly furnished with brass stem, brass bushings in bonnet and brass gland.

Especially adapted for use on fire protection systems.

These valves are so constructed as to admit of being packed under pressure when wide open. The position of the outside screw indicates whether the valve is open, partially open or closed. We do not recommend the use of screwed end valves above 6 inches.

For general description, see page 368. For table of dimensions, see pages 422, 423. For names of parts, see page 424. Templates for drilling, see page 196. Price list for drilling, see page 413.

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MEDIUM PRESSURE IRON BODY GATE VALVES

Our Medium Pressure Iron Body Gate Valve is of the wedge type. This is the simplest possible style of construction; is strong and durable, and the number of working surfaces subject to wear and corrosion are reduced to a minimum.

The bodies are designed with long radius curves, and have ample guides for the gate, so that its faces do not touch the seats until the valve is entirely closed. All brass parts are of "High-Duty-Metal," which is a metal with unusual wearing qualities and peculiarly adapted for use with high pressure steam. For complete information regarding the origin and properties of "High-Duty-Metal," see page 295.

The stuffing box gland is made of malleable iron which will prevent troublesome breakages at this point on account of bolts being unequally tightened. For interior construction, see page 428.

They are so constructed as to admit of being packed under pressure when wide open. Care should be taken to screw the disc up firmly against the bonnet before starting to remove the old packing.

Valves with male and female, tongued and grooved, or raised face flanges, can be furnished when so ordered. It is our practice, unless otherwise specified, to furnish male and female and tongued and grooved valves and fittings as follows:

Valves—Both ends male.
Tees—Male and female on run, female on outlet.
Elbows—Male and female.

RECOMMENDATIONS

These valves are designed and recommended for steam working pressures up to and including 175 pounds per square inch.

Each valve is tested at 500 pounds per square inch cold water pressure before being placed in stock, and when so specified they can be specially tested at even higher pressures.

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MEDIUM PRESSURE IRON BODY GATE VALVE

Wedge Gate Pattern

For Steam Working Pressures up to 175 Pounds

Fig. H-1550

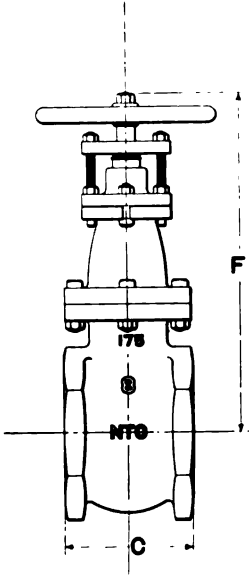


Fig. H-1551

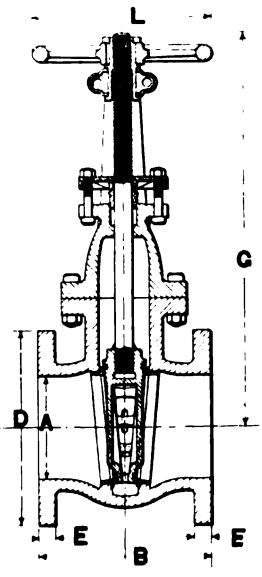
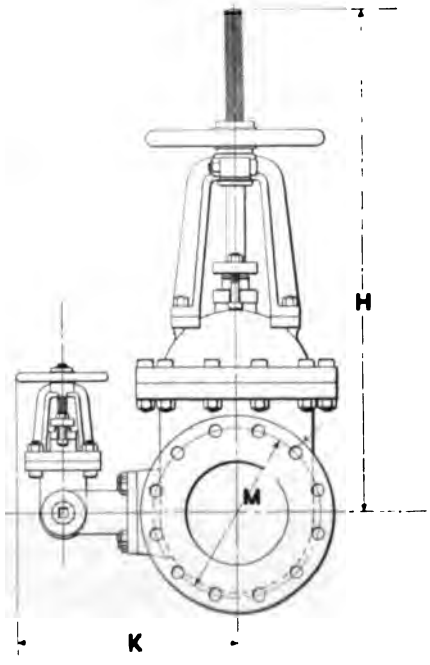


Fig. H-1552



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MEDIUM PRESSURE IRON BODY GATE VALVES

Wedge Gate Pattern

TABLE OF DIMENSIONS

Size			2	2½	3	3½	4	4½	5	6	7	8	9	10	12	14	15	16	18
Diam. of Port	inches	A	2	2½	3	3½	4	4½	5	6	7	8	9	10	12	13½	14½	15½	17½
Face to Face, Flanged End	"	B	7½	8	9½	10	10½	11	11½	12	12½	13½	14	15	16	17	17	18	19
Length of Screwed End	"	C	5½	6	7¼	7½	7¾	8¼	8½	8¾	9¼	10	10¾	11½	12½	....	....	....	....
Diam. of Flanges	"	D	6½	7½	8¼	9	10	10½	11	12½	14	15	16	17½	20	22½	23½	25	27
Thickness of Flanges	"	E	7/8	7/8	15/16	15/16	1	1 1/16	1 1/8	1 3/16	1¼	1 5/16	1 5/16	1 3/8	1 5/8	1 11/16	1¾	1 13/16	1 7/8
Center of Port to Top of Stem—N. R. S	"	F	10	10¾	14⅛	15¼	16½	17⅜	18⅞	21 5/16	23¾	26⅜	28⅛	31	34⅜	38½	40¾	44½	48¼
Center of Port to top of Stem—Closed—O. S. Y.	"	G	10⅛	11⅝	14½	15⅞	17¾	19⅛	21⅜	24⅝	27¼	30½	33½	37⅞	42½	49	51	55	61⅛
Center of Port to Top of Stem—Open—O. S. Y.	"	H	12⅜	14⅜	17⅞	19¾	22⅛	24	26⅝	31⅛	34⅝	38⅞	43	47½	55	63¼	66⅜	71¼	79⅝
No. of Turns to Open			11¼	14	10	11½	17¼	19¾	21	25¾	29½	16¾	19	21¼	25¼	28¼	30¼	32¼	37
Diam. of Hand Wheel	inches	L	6	6	7½	8	9	10	11	12	13	14	14	15⅝	18	20	20	23	23
Diam. of Bolt Circle	"	M	5	5⅞	6⅝	7¼	7⅞	8½	9¼	10⅝	11⅞	13	14	15¼	17¾	20	21	22½	24½
No. of Bolts in End Flanges			4	4	8	8	8	8	8	12	12	12	12	16	16	20	20	20	24
Diam. of Bolts in End Flanges	inches		5/8	3/4	5/8	5/8	3/4	3/4	3/4	3/4	7/8	7/8	7/8	7/8	7/8	7/8	1	1	1
Size of By-pass	"		....	....	....	....	....	....	....	1¼	1¼	1½	1½	1½	2	2	2	3	3
Center of Valve to Outside of By-pass	"	K	....	....	....	....	....	....	....	13⅛	13⅞	15⅛	15⅝	16⅜	18½	19¾	20⅜	23	24

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DRILLING EXTRA HEAVY AND MEDIUM PRESSURE FLANGED VALVES

PRICE LIST

Size Inches	Price, Drilling Valves with Two Flanges, Except Angle Valves Each	Price Drilling Angle Valves Each
1	.60	1.00
1¼	.60	1.00
1½	.60	1.00
2	.75	1.25
2½	.75	1.25
3	.75	1.25
3½	1.00	1.50
4	1.25	1.75
4½	1.50	2.00
5	1.50	2.00
6	1.75	2.50
7	2.25	3.00
8	2.25	3.00
9	2.50	3.50
10	2.50	3.50
12	3.50	5.00
14	4.00	....
15	4.50	....
16	5.00	....
18	6.00	....
20	7.50	....
22	9.00	....
24	10.00	....
26	11.00	....
28	12.00	....

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SPECIAL FACING OF FLANGES FOR MEDIUM AND EXTRA HEAVY VALVES

PRICE LIST

Fig. H-1553
Male Face

Fig. H-1554
Female Face

Fig. H-1555
Tongued Face

Fig. H-1556
Grooved Face

Fig. H-1557
Raised Face

Fig. H-1558
Bolt Holes Spot Faced

Size .....inches	1	1¼	1½	2	2½	3	3½	4
For Male, Female, Tongued, Grooved or Raised Faces, add net per Valve with two Flanges.....	1.00	1.00	1.00	1.00	1.25	1.25	1.25	1.25
For Male, Female, Tongued, Grooved or Raised Faces, add net per Valve with three Flanges.....	1.25	1.25	1.25	1.75	1.75	1.75	1.75	1.75
For Spot Facing, add net per Flange	.20	.20	.20	.20	.20	.40	.40	.40
Size .....inches	4½	5	6	7	8	9	10	12
For Male, Female, Tongued, Grooved or Raised Faces, add net per Valve with two Flanges.....	1.25	1.25	1.50	1.50	2.00	9.00	2.00	2.50
For Male, Female, Tongued, Grooved or Raised Faces, add net per Valve with three Flanges.....	1.75	1.75	2.00	2.00	2.50	2.50	2.50	3.00
For Spot Facing, add net per Flange	.40	.40	.60	.60	.60	.60	.80	.80
Size .....inches	14	15	16	18	20	22	24	.....
For Male, Female, Tongued, Grooved or Raised Faces, add net per Valve with two Flanges.....	3.25	3.25	4.00	5.00	6.00	8.00	10.00	.....
For male, Female, Tongued, Grooved or Raised Faces, add net per Valve with three Flanges.....	4.00	4.00	5.00	6.25	7.50	10.00	12.50	.....
For Spot Facing, add net per Flange	1.00	1.00	1.00	1.20	1.20	1.40	1.40	.....

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NAMES OF PARTS

MEDIUM PRESSURE IRON BODY GATE VALVES

Wedge Gate Pattern

Fig. H-1559

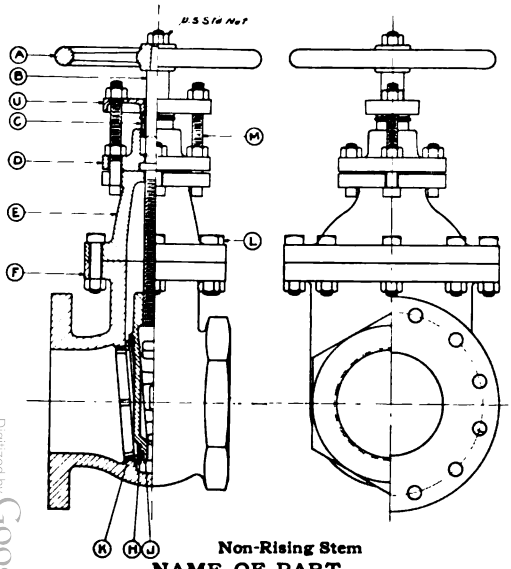


Fig. H-1560

Non-Rising Stem

A	B	C	D	E	F	H	J	K	L	M	U
Hand Wheel	Stem	Gland	Stuffing Box	Bonnet	Body	Wedge Ring	Wedge	Seat Ring	Bonnet Bolts	Gland Bolts	Gland Plate

Fig. H-1561

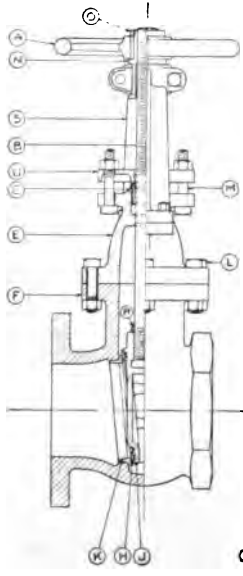
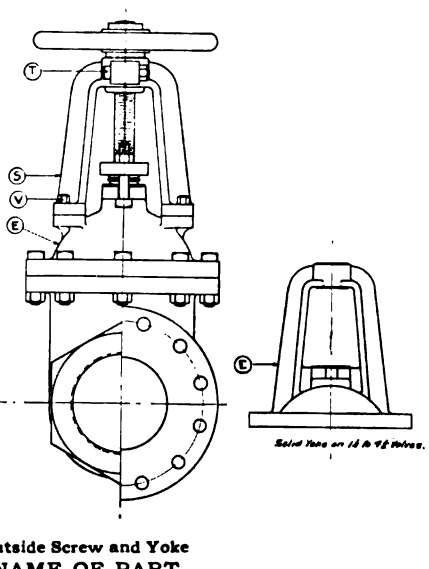


Fig. H-1562



Outside Screw and Yoke

A	B	C	E	F	H	J	K	L	M	N	O	R	S	T	U	V
Hand Wheel	Stem	Gland	Bonnet	Body	Wedge Ring	Wedge	Seat Ring	Bonnet Bolts	Gland Bolts	Yoke Nut	Lock Nut	P'king Ring	Yoke	Yoke Bolt	Gland Plate	Bonnet Cap Screws

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MEDIUM PRESSURE IRON BODY GATE VALVES

Wedge Gate Pattern. Non-Rising Stem
Brass Mounted
For Steam Working Pressures up to 175 Pounds

Fig. H-1564
Non-Rising Stem

Size.....inches	2	2½	3	3½	4	4½	5	6	7
No. H-1563, Screwed .....each	10.00	12.00	15.00	18.00	20.00	23.00	25.00	30.00	45.00
Fig. H-1564, Flanged..... "	10.00	12.00	15.00	18.00	20.00	23.00	25.00	30.00	45.00
Diameter of Flanges.....inches	6½	7½	8¼	9	10	10½	11	12½	14
Length, Face to Face, Flanged "	7½	8	9½	10	10½	11	11½	12	12½

Size .....each	8	9	10	12	14	15	16	18	
No. H-1563, Screwed .....each	55.00	80.00	90.00	125.00	.....	.....	.....	.....	.....
Fig. H-1564, Flanged..... "	55.00	80.00	90.00	125.00	190.00	240.00	275.00	375.00	.....
Diameter of Flanges.....inches	15	16	17½	20	22½	23½	25	27	.....
Length, Face to Face, Flanged "	13½	14	15	16	17	17	18	19	.....

In sizes 12 inches and smaller screwed end valves will be furnished unless otherwise specified.

Regularly furnished with brass stem.

These valves are so constructed as to admit of being packed under pressure when wide open.

We do not recommend the use of screwed end valves above 6 inches.

We recommend the use of by-pass on valves 8 inches and larger.

For general description, see page 427.
For table of dimensions, see pages 428, 429.
For names of parts, see page 432.
Templates for drilling, see pages 224, 225.
Price list for drilling, see page 430.

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MEDIUM PRESSURE IRON BODY GATE VALVES

With By-Pass
Wedge Gate Pattern. Non-Rising Stem
Brass Mounted
For Steam Working Pressures up to 175 Pounds

Fig. H-1565

FLANGED

Size .....inches	6	7	8	9	10	12	14	15	16	18
Flanged.....each	55.00	75.00	90.00	115.00	125.00	165.00	240.00	290.00	325.00	425.00
Diam. of Flanges.....inches	12¼	14	15	16	17½	20	22½	23½	25	27
Size of By-Pass ..... "	1¼	1¼	1¼	1¼	1½	2	2	2	3	3

Regularly furnished with brass stem.
These valves are so constructed as to admit of being packed under pressure when wide open.
We recommend the use of by-pass on valves 8 inches and larger.
For general description, see page 427.
For table of dimensions, see pages 428, 429.
For names of parts, see page 432.
Templates for drilling, see pages 224, 225.
Price list for drilling, see page 430.

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MEDIUM PRESSURE IRON BODY GATE VALVES

Wedge Gate Pattern. Outside Screw and Yoke
Brass Mounted
For Steam Working Pressures up to 175 Pounds

Fig. H-1567

FLANGED

Size.....inches	2	2½	3	3½	4	4½	5	6	7
No. H-1566, Screwed.....each	18.00	20.00	23.00	28.00	33.00	40.00	46 00	55.00	70.00
Fig. H-1567, Flanged..... "	18.00	20.00	23.00	28.00	33.00	40.00	46 00	55 00	70.00
Diameter of Flanges.....inches	6½	7½	8¼	9	10	10½	11	12½	14
Length, Face to Face, Flgd.. "	7½	8	9½	10	10½	11	11½	12	12½

Size.....inches	8	9	10	12	14	15	16	18	.....
No. H-1566, Screwed.....each	90.00	115.00	135.00	170.00	.....	.....	.....	.....	.....
Fig. H-1567, Flanged..... "	90.00	115.00	135.00	170.00	240.00	300.00	350.00	475.00	.....
Diameter of Flanges.....inches	15	16	17½	20	22½	23½	25	27	.....
Length, Face to Face, Flgd.. "	13½	14	15	16	17	17	18	19	.....

In sizes 12 inches and smaller screwed end valves will be furnished unless otherwise specified. Ordinarily furnished with steel stems. Extra charge for brass stems.

These valves are so constructed as to admit of being packed under pressure when wide open. The position of the outside screw indicates whether the valve is open, partially open, or closed. We do not recommend the use of screwed end valves above 6 inches.

We recommend the use of by-pass on valves 8 inches and larger. For general description, see page 427. For table of dimensions, see pages 428, 429. For names of parts, see page 432. Templates for drilling, see pages 224, 225. Price list for drilling, see page 430.

MEDIUM PRESSURE IRON BODY GATE VALVES

With By-Pass
Wedge Gate Pattern. Outside Screw and Yoke. Brass Mounted
For Steam Working Pressures up to 175 Pounds

Fig. H-1568

FLANGED

Size.....inches	6	7	8	9	10
Flanged.....each	80.00	100.00	125.00	150.00	170.00
Diameter of Flanges.....inches	12½	14	15	16	17½
Size of By-Pass.....“	1¼	1¼	1½	1½	1½
Size.....inches	12	14	15	16	18
Flanged.....each	210.00	290.00	350.00	400.00	525.00
Diameter of Flanges.....inches	20	22½	23½	25	27
Size of By-Pass.....“	2	2	2	2	3

Ordinarily furnished with steel stems; extra charge for brass stems.
These valves are so constructed as to admit of being packed under pressure when wide open. The position of outside screw indicates whether the valve is open, partially open, or closed. We recommend the use of by-pass on valves 8 inches and larger.
For general description, see page 427. For names of parts, see page 432.
For table of dimensions, see pages 428, 429.
Templates for drilling, see pages 224, 225. Price list for drilling, see page 430.

EXTRA HEAVY IRON BODY VALVES

Our line of Extra Heavy Iron Body Gate, Globe and Angle Valves was designed, after making a careful study of the Valves for this class of work, and taking into consideration the extreme conditions of service under which they would be compelled to operate.

The Gate Valves are of the solid wedge type, which for absolute safety, long life, and ease of repair, when Valve is subjected to high pressure and hard service, has proved most satisfactory.

CONSTRUCTION

In designing these Valves considerable extra room has been provided below the wedge when seated, so that in case of accumulation of sediment in this space the Valve wedge will not fail to seat.

Substantial guides in the Valve body prevent the faces of the gates from touching the seats until the Valve is entirely closed.

The necks behind the flanges and hexagons have been made unusually thick, so that danger of breakage at this point is reduced to a minimum.

The body bonnet flange and the bonnet flange proper have been made very thick to prevent springing and consequent leakage at this joint. All these Valves are so constructed as to admit of being packed under pressure when wide open. Care should be taken to screw the disc up firmly against the bonnet before starting to remove the old packing.

By-passes are recommended for all Valves 8 inch and larger.

We are prepared to furnish these Valves with plain, male and female, tongued and grooved or raised face flanged ends and companion flanges to match.

It is our practice, unless otherwise specified, to furnish male and female, and tongued and grooved valves and fittings as follows:

Valves—Both ends male.

Tees—Male and female on the run, female on the outlet.

Elbows—Male and female.

MATERIAL

All brass parts, including stems, are made of "High-Duty-Metal," a metal with unusual wearing qualities and peculiarly adapted for use with high pressure steam. For full particulars regarding the discovery and properties of "High-Duty-Metal," see page 295.

Bolts are used throughout instead of studs. The advantage of this will be readily appreciated by the shop man.

The bodies are made of a special strong iron, having a tensile strength of from 26,000 pounds to 28,000 pounds per square inch.

RECOMMENDATION

This Line of Valves is designed and recommended for pressures up to and including 250 pounds. Each valve is thoroughly tested at 800 pounds cold water pressure before leaving the factory.

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EXTRA HEAVY IRON BODY GATE VALVES

Wedge Gate Pattern

For Steam Working Pressures up to 250 Pounds

Fig. H-1600

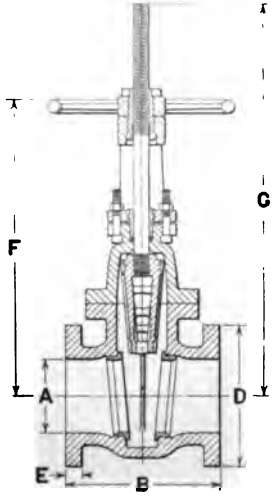


Fig. H-1601

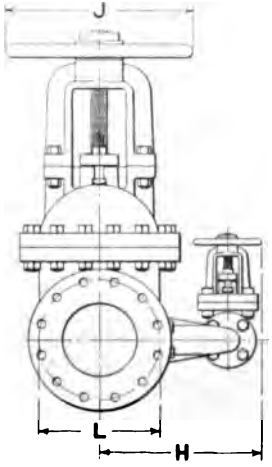
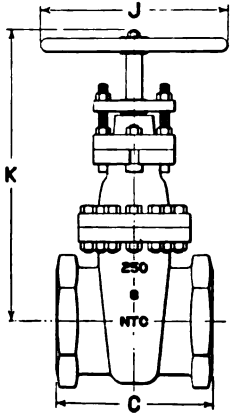


Fig. H-1602



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EXTRA HEAVY IRON BODY GATE VALVES

Wedge Gate Pattern

TABLE OF DIMENSIONS

Diameter of Port Flange End.....inches	A	1¼	1½	2	2½	3	3½	4	4½	5	6	7
Face to Face, Flange End.....inches	B	6½	7½	8½	9½	11⅛	11⅞	12	13¼	15	15⅞	16¼
Face to Face, Screw End..... "	C	6½	7½	8½	9½	11⅛	11⅞	12	13¼	15	15⅞	16¼
Diameter of Flanges..... "	D	5	6	6½	7½	8¼	9	10	10½	11	12½	14
Thickness of Flanges..... "	E	¾	13/16	⅞	1	1⅛	1⅜	1¼	1⅝	1⅜	1 7/16	1½
Center of Port to Top of Hand Wheel, O. S. Y..... "	F	11 5/16	11¼	12⅛	13 5/16	15	16 9/16	19¼	20½	22¾	25½	28⅛
Center of Port to Top of Stem, O. S. Y., Open..... "	G	12⅝	13 1/16	14⅜	16¼	18 7/16	20½	23 11/16	25½	28⅜	32⅛	36⅛
Center of Port to Outside of By-pass... "	H	....	....	....	....	....	....	....	....	....	....	....
Size of By-pass..... "	....	....	....	....	....	....	....	....	....	....	....	....
Diameter of Hand Wheel..... "	J	5	5½	6½	7½	9	10	12	12	14	15	18
Center of Port to Top of Stem, N. R. S. "	K	9½	12½	14⅛	14½	16	16½	18½	20⅛	21	23½	25⅞
Diameter of Bolt Circle..... "	L	3¾	4½	5	5⅞	6⅝	7¼	7⅞	8½	9¼	10⅝	11⅞
Number of Bolts..... "	....	4	4	4	4	8	8	8	8	8	12	12
Size of Bolts..... "	....	½	⅝	⅝	¾	⅝	⅝	¾	¾	¾	¾	⅞

Diameter of Port, Flange End.....inches	A	8	9	10	12	14	15	16	18	20	22	24
Face to Face, Flange End.....inches	B	16½	17	18	19¾	22½	22½	24	26	28	29½	31
Face to Face, Screw End..... "	C	16½	17	18	19¾	....	....	....	....	....	....	....
Diameter of Flanges..... "	D	15	16	17½	20	22½	23½	25	27	29½	31½	34
Thickness of Flanges..... "	E	1⅝	1¾	1 7/8	2	2⅛	2 3/16	2¼	2⅜	2½	2⅝	2¾
Center of Port to Top of Hand Wheel, O. S. Y..... "	F	33⅓	36 5/8	40⅛	45¼	50½	54	57	63	67½	79	85
Center of Port to Top of Stem, O. S. Y., Open..... "	G	41⅞	46⅜	51	58⅛	64¾	69	73	81¼	87½	101	109
Center of Port to Outside of By-pass... "	H	16 7/16	17 3/8	18 5/16	21⅛	21¾	22¾	26½	27¾	31¾	33½	34¼
Size of By-pass..... "	....	1½	1½	1½	2	2	2	3	3	4	4	4
Diameter of Hand Wheel..... "	J	20	20	22	24	24	24	27	30	30	36	36
Center of Port to Top of Stem, N. R. S. "	K	28¾	30⅞	33⅞	38⅛	42 3/4	42¾	....	....	....	....	....
Diameter of Bolt Circle..... "	L	13	14	15¼	17¾	20	21	22½	24½	26¾	28¾	31¼
Number of Bolts..... "	....	12	12	16	16	20	20	20	24	24	28	28
Size of Bolts..... "	....	⅞	⅞	⅞	⅞	⅞	1	1	1	1⅛	1⅛	1⅛

Price list for drilling, see page 430.
Price list for special facing, see page 431.

Dimensions for special facing, see pages 224, 225.
Extra prices for bolting on companion flanges, etc., see page 228.

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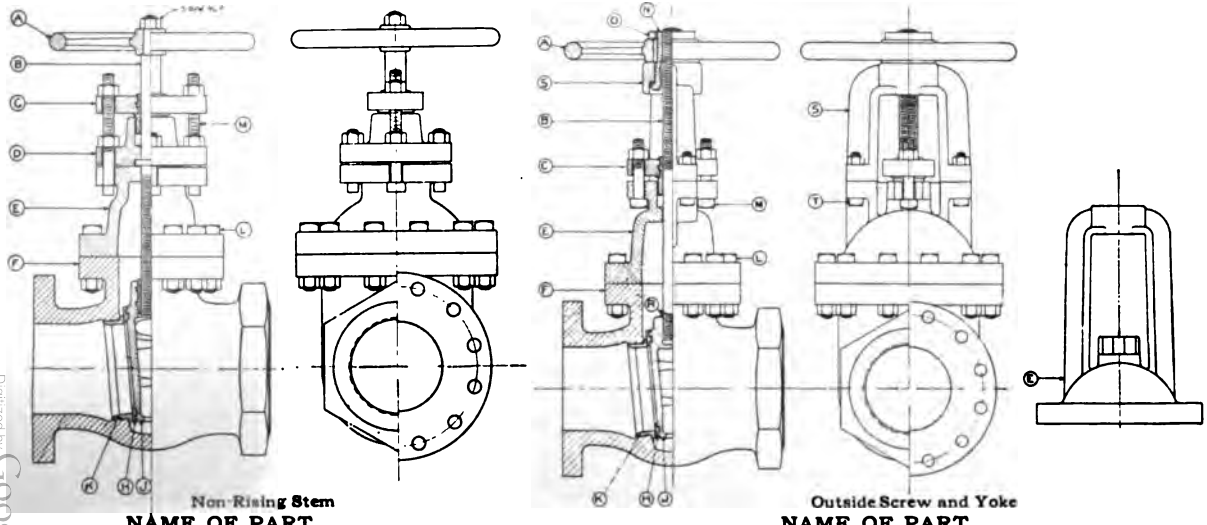
NAMES OF PARTS

EXTRA HEAVY IRON BODY GATE VALVES

Wedge Gate Pattern

Fig. H-1603 Fig. H-1604 Fig. H-1605 Fig. H-1606 Fig. H-1607



Non-Rising Stem

NAME OF PART	A	B	C	D	E	F	K	L	M	J	H
	Hand Wheel	Stem	Gland	Stuffing Box	Bonnet	Body	Seat Ring	Bonnet Bolts	Gland Bolts	Wedge	Wedge Ring

Outside Screw and Yoke

NAME OF PART	A	B	C	E	F	H	J	K	L	M	N	O	R	S	T
	Hand Wheel	Stem	Gland	Bonnet	Body	Wedge Ring	Wedge	Seat Ring	Bonnet Bolts	Gland Bolts	Yoke Nut	Lock Nut	Packing Ring	Yoke	Yoke Bolts

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EXTRA HEAVY IRON BODY GATE VALVES

Wedge Gate Pattern. Non-Rising Stem. Brass Mounted
For Steam Working Pressures up too 250 Pounds
Tested to 800 Pounds Cold Water Pressure per Square Inch

Fig. H-1609
Non-Rising Stem

"High-Duty-Metal" Seats and Faces of Disc. "High-Duty-Metal" in All Brass Parts

Size.....inches	1¼	1½	2	2½	3	3½	4	4½	5
No. H-1608, Screwed Ends	20.00	22.50	27.50	35.00	40.00	45.00	50.00	60.00	65.00
Fig. H-1609, Flanged Ends	20.00	22.50	27.50	35.00	40.00	45.00	50.00	60.00	65.00
Diam. of Flanges...inches	5	6	6½	7½	8¼	9	10	10½	11
F. to F., Flanged "	6½	7½	8½	9½	11⅛	11⅞	12	13¼	15

Size.....inches	6	7	8	9	10	12	14	15	16
No. H-1608, Screwed Ends	80.00	100.00	120.00	160.00	200.00	....	....	....	....
Fig. H-1609, Flanged Ends	80.00	100.00	120.00	160.00	200.00	300.00	400.00	400.00	550.00
Diam. of Flanges...inches	12½	14	15	16	17½	20	22½	23½	25
F. to F., Flanged "	15⅞	16¼	16½	17	18	19¾	22½	22½	24

In sizes 10 inches and smaller screwed end valves will be furnished unless otherwise specified. Regularly furnished with brass stem. Valves are so constructed as to admit of being packed under pressure when wide open. We do not recommend the use of screwed end valves above 6 inches. We recommend the use of by-pass on valves 8 inches and larger.

For general description, see page 437. For table of dimensions, see pages 438, 439.
For names of parts, see page 440. Templates for drilling, see pages 224, 225.
Price list for drilling, see page 430. For by-pass valves, see pages 442, 445.
List for companion flanges, see page 222.

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EXTRA HEAVY IRON BODY GATE VALVES

With By-Pass
Wedge Gate Pattern. Non-Rising Stem
Brass Mounted
For Steam Working Pressures up to 250 Pounds
Tested to 800 Pounds Cold Water Pressure, per Square Inch

Fig. H-1610
Non-Rising Stem

"High-Duty-Metal" Seats and Faces of Disc. "High-Duty-Metal" in All Brass Parts

Size.....inches	6	7	8	9	10	12	14	15	16
Flanged Ends..	110.00	130.00	150.00	200.00	250.00	350.00	450.00	450.00	600.00
Diam. of Flanges..ins.	12½	14	15	16	17½	20	22½	23½	25
Size of By-Pass.....	1¼	1¼	1½	1½	1½	2	2	2	3

Regularly furnished with brass stem.

These valves are so constructed as to admit of being packed under pressure when wide open.

On valves 8 inches and larger we recommend the use of by-passes.

For general description, see page 437.
For table of dimensions, see pages 438, 439.
For names of parts, see page 440.
Templates for drilling, see pages 224, 225.
Price list for drilling, see page 430.
List for companion flanges, see page 222.

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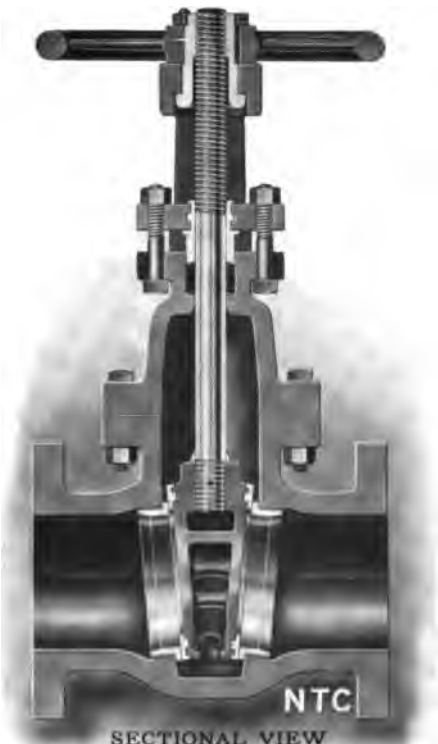
EXTRA HEAVY IRON BODY GATE VALVES

Wedge Gate Pattern. Outside Screw and Yoke
Brass Mounted
For Steam Working Pressures up to 250 Pounds
Tested to 800 Pounds, Cold Water Pressure, per Square Inch

Fig. H-1611
Outside Screw and Yoke



SECTIONAL VIEW

These valves are so constructed as to admit of being packed under pressure when wide open.

The position of the outside screw indicates whether the valve is open, partially open, or closed.

We recommend the use of by-passes on valves 8 inches and larger.

For general description, see page 437.
For table of dimensions, see pages 438, 439.
For names of parts, see page 440.
For lists, see pages 444, 445.
Templates for drilling, see pages 224, 225.
Price list for drilling, see page 430.

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EXTRA HEAVY IRON BODY GATE VALVES

Wedge Gate Pattern. Outside Screw and Yoke
Brass Mounted
For Steam Working Pressures up to 250 Pounds
Tested to 800 Pounds Cold Water Pressure per Square Inch

Fig. H-1613
Outside Screw and Yoke

"High-Duty-Metal" Seats and Faces of Disc. "High-Duty-Metal" in All Brass Parts

Size.....inches	1¼	1½	2	2½	3	3½	4	4½	5
No. H-1612, Screwed Ends, ea	27.50	30.00	35.00	45.00	50.00	60.00	65.00	75.00	85.00
Fig. H-1613, Flanged Ends "	27.50	30.00	35.00	45.00	50.00	60.00	65.00	75.00	85.00
Diam. Flanges.....inches	5	6	6½	7½	8¼	9	10	10½	11
F. to F. Flanged... "	6½	7½	8½	9½	11⅛	11⅞	12	13¼	15

Size.....inches	6	7	8	9	10	12	14	15	16
No. H-1612, Screwed Ends, ea	105.00	125.00	150.00	200.00	250.00	....	....	....	....
Fig. H-1613, Flanged Ends "	105.00	125.00	150.00	200.00	250.00	350.00	450.00	450.00	600.00
Diam. Flanges.....inches	12½	14	15	16	17½	20	22½	23½	25
F. to F. Flanged.... "	15⅞	16¼	16½	17	18	19¾	22½	22½	24

In sizes 10 inches and smaller, screwed end valves will be furnished unless otherwise specified. Ordinarily furnished with steel stems. Extra charge for brass stems.

These valves are so constructed as to admit of being packed under pressure when wide open. The position of outside screw indicates whether the valve is open, partially open, or closed. We do not recommend the use of screwed end valves above 6 inches.

We recommend the use of by-pass on valves 8 inches and larger.

For general description, see page 437. For table of dimensions, see pages 438, 439.
For names of parts, see page 440. For interior construction, see page 443.
Templates for drilling, see pages 224, 225. Price list for drilling, see page 430.
For by-pass valves, see pages 442, 445. List for companion flanges, see page 222.

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EXTRA HEAVY IRON BODY GATE VALVES

With By-Pass
Wedge Gate Pattern. Outside Screw and Yoke
Brass Mounted
For Steam Working Pressures up to 250 Pounds
Tested to 800 Pounds, Cold Water Pressure per Square Inch
Fig. H-1614

Outside Screw and Yoke

"High-Duty-Metal" Seats and Faces of Disc. "High-Duty-Metal" in all Brass Parts.

Size.....Inches	6	7	8	9	10	12	14
Flanged Ends.....	135.00	155.00	185.00	240.00	300.00	400.00	500.00
Diam. of Flanges...	12½	14	15	16	17½	20	22½
Size of By-Pass.....	1¼	1¼	1½	1½	1½	2	2
Size.....Inches	15	16	18	20	22	24	....
Flanged Ends.....	500.00	650.00	850.00	1,150.00	1,450.00	1,850.00	....
Diam. of Flanges...	23½	25	27	29½	31½	34	....
Size of By-Pass.....	2	3	3	4	4	4	....

These valves are furnished with steel stems. Brass stems will be furnished when desired, at an extra charge. These valves are so constructed as to admit of being packed under pressure when wide open. The position of outside screw indicates whether the valve is open, partially open or closed. On valves 8 inches and larger, we recommend the use of by-passes. For general description, see page 437.

For table of dimensions, see pages 438, 439. For names of parts, see page 440.
For interior construction, see page 443. Templates for drilling, see pages 224, 225.
Price list for drilling, see page 430. List for companion flanges, see page 222.

EXTRA HEAVY IRON BODY GLOBE AND ANGLE VALVES

For Steam Working Pressures up to 250 Pounds

Tested to 800 Pounds, Cold Water Pressures, per Square Inch

Fig H-1615

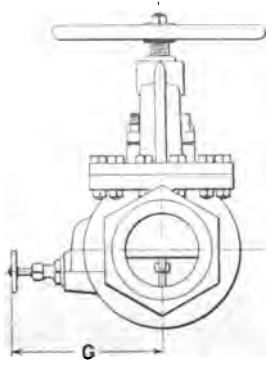


Fig. H-1616

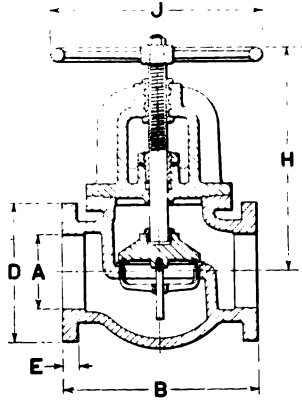


Fig. H-1617

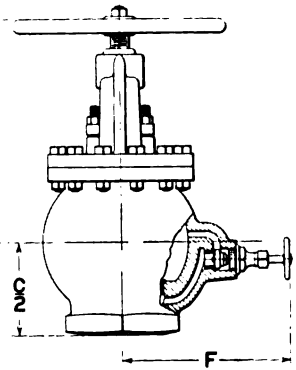
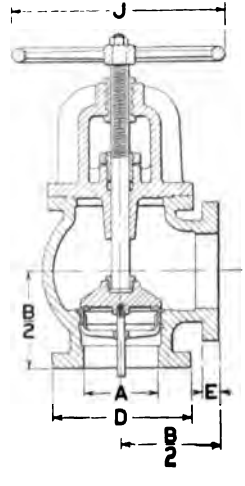


Fig. H-1618



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EXTRA HEAVY IRON BODY GLOBE AND ANGLE VALVES

TABLE OF DIMENSIONS

Size.....inches		2	2½	3	3½	4	4½	5	6	7	8	10	12
Diameter of Port Flange End.....inches	A	2	2½	3¼	3 11/16	4 3/16	4 11/16	5¼	6¼	7¼	8¼	10 5/16	12
Face to Face, Flange End..... "	B	10½	11½	12½	13¼	14	15	15¾	17½	19¼	21	24½	28
Center to Face, Angle Valve, Flange End..... "	B/2	5¼	5¾	6¼	6 5/8	7	7½	7 7/8	8¾	9 5/8	10½	12¼	14
Face to Face, Screw End ..... "	C	9½	10 5/8	11¾	12¼	13	14	14 7/8	16½	18¼	20	....	....
Center to Face, Angle Valve, Screw End ..... "	C/2	4¾	5 5/16	5 7/8	6⅛	6½	7	7 7/16	8¼	9⅛	10	....	....
Diameter of Flange..... "	D	6½	7½	8¼	9	10	10½	11	12½	14	15	17½	20
Thickness of Flange ..... "	E	7/8	1	1⅛	1 3/16	1¼	1 5/16	1⅜	1 7/16	1½	1 5/8	1 7/8	2
Center of Valve to Outside of By-Pass, Angle.. "	F	....	....	....	....	....	....	....	....	....	18 3/8	20 3/8	23¾
Center of Valve to Outside of By-Pass, Globe.. "	G	....	....	....	....	....	....	....	....	....	16 5/8	18 7/16	21 7/16
Center of Port to Top of Hand Wheel, Open.... "	H	14 3/8	16¼	17¼	18	19¼	20 3/8	21½	24	25 5/8	28 3/8	33	37 3/8
Diameter of Hand Wheel..... "	J	7½	10	11	11	14	14	15¾	18	20	23	27	30
Size of By-Pass..... "		....	....	....	....	....	....	....	....	....	1½	1½	2

Templates for drilling, see pages 224, 225.
Price list for drilling, see page 430.
Price list for special facing, see page 431.
Extra prices for bolting on companion flanges, etc., see page 228.

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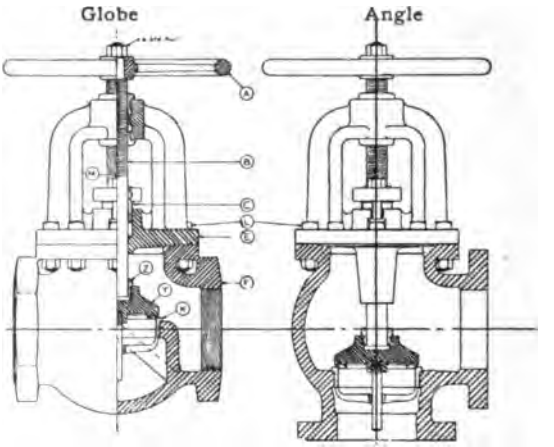
NAMES OF PARTS

EXTRA HEAVY IRON BODY GLOBE, ANGLE AND SWING CHECK VALVES

Fig. H-1619 Globe

Fig. H-1620 Angle

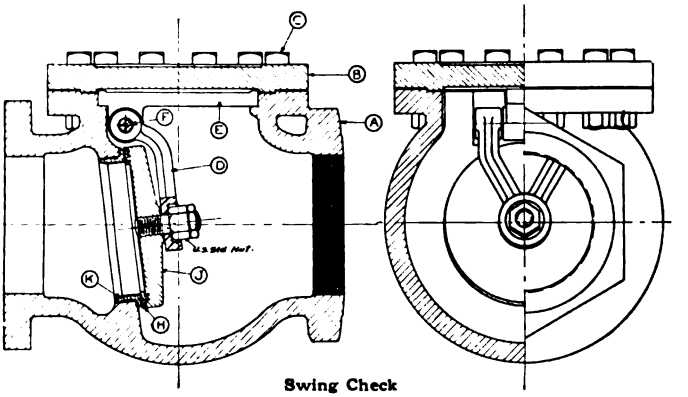


NAME OF PART

A	B	C	E	F	K	L	M	Y	Z
Hand Wheel	Stem	Gland	Bonnet	Body	Seat Ring	Bonnet Bolts	Gland Bolts	Swivel	Swivel Ring

Fig. H-1621

Fig. H-1622



Swing Check

NAME OF PART

A	B	C	D	E	F	H	J	K
Body	Cap	Cap Bolts	Hinge	Hinge Bar	Hinge Pin	Disc Ring	Disc	Seat Ring

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EXTRA HEAVY IRON BODY GLOBE VALVES

Brass Mounted. With Yoke
For Steam Working Pressures up to 250 Pounds
Tested to 800 Pounds Cold Water Pressure per Square Inch

Fig. H-1624

FLANGED

"High-Duty-Metal" in the Seats and Faces of Discs
"High-Duty-Metal" in all Brass Parts

Size.....inches	2	2½	3	3½	4	4½
No. H-1623, Screwed Ends.....each	26.00	33.00	37.00	42.00	46.00	56.00
Fig. H-1624, Flanged Ends..... "	27.50	35.00	40.00	45.00	50.00	60.00
No. H-1625, Flanged, with By-Pass.... "	.....	.....	.....	.....	.....	.....
Diameter of Flanges.....inches	6½	7½	8¼	9	10	10½
Size of By-Pass..... "	.....	.....	.....	.....	.....	.....

Size.....inches	5	6	7	8	10	12
No. H-1633, Screwed Ends.....each	61.00	75.00	95.00	114.00	190.00	.....
Fig. H-1624, Flanged Ends..... "	65.00	80.00	100.00	120.00	200.00	300.00
No. H-1625, Flanged, with By-Pass.... "	.....	.....	.....	150.00	250.00	350.00
Diameter of Flanges.....inches	11	12½	14	15	17½	20
Size of By-Pass..... "	.....	.....	.....	1½	1½	2

In sizes 10 inches and smaller, screwed end valves will be furnished unless otherwise specified. Ordinarily furnished with steel stem; extra charge for brass stems. We can also furnish flanged valves with male, female, tongued, grooved or raised face flanges, see page 431 for price list. Valves are so constructed as to admit of being packed under pressure when wide open. We do not recommend the use of screwed end valves above 6 inches. On valves 8 inches and larger, we recommend the use of by-passes. For general description, see page 437. For table of dimensions, see pages 446, 447. For names of parts, see page 448. Templates for drilling, see pages 224, 225. Price list for drilling, see page 430. List for companion flanges, see page 222.

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EXTRA HEAVY IRON BODY ANGLE VALVES

Brass Mounted. With Yoke
For Steam Working Pressures up to 250 Pounds
Tested to 800 Pounds, Cold Water Pressure, per Square Inch

Fig. H-1627

FLANGED

"High-Duty-Metal" in the Seats and Faces of Discs
"High-Duty-Metal" in all Brass Parts

Size ..... inches	2	2½	3	3½	4	4½
No. H 1626, Screwed Ends..... each	26.00	33.00	37.00	42.00	46.00	56.00
Fig. H-1627, Flanged " ..... "	27.50	35.00	40.00	45.00	50.00	60.00
Diameter of Flanges..... inches	6½	7½	8¼	9	10	10½
Size..... inches	5	6	7	8	10	12
No. H-1626, Screwed Ends..... each	61.00	75.00	95.00	114.00	190.00	....
Fig. H-1627, Flanged " ..... "	65.00	80.00	100.00	120.00	200.00	300.00
No. H-1628, " with By-Pass "	....	....	....	150.00	250.00	350.00
Diameter of Flanges..... inches	11	12½	14	15	17½	20
Size of By-Pass ..... "	....	....	....	1½	1½	2

In sizes 10 inches and smaller, screwed end valves will be furnished unless otherwise specified. Flanged valves are regularly furnished with flanges faced only. Ordinarily furnished with steel stems. Extra charge for brass stems. We can also furnish flanged valves with male, female, tongued, grooved or raised face flanges; see page 431 for price list. These valves are so constructed as to admit of being packed under pressure when wide open. We do not recommend the use of screwed end valves above 6 inches. We recommend the use of by-pass on valves 8 inches and larger. For general description, see page 437. For table of dimensions, see pages 446, 447. For names of parts, see page 448. Templates for drilling, see pages 224, 225. Price list for drilling, see page 430. List for companion flanges, see page 222.

EXTRA HEAVY IRON BODY CHECK VALVES

Swing Check. Brass Mounted
For Steam Working Pressures up to 250 Pounds
Tested to 800 Pounds Cold Water Pressure per Square Inch

Fig. H-1629

Size.....inches	2	2½	3	3½	4	4½
Fig. H-1629, Screwed Ends	26.00	33.00	37.00	42.00	46.00	56.00
No. H-1630, Flanged Ends.....	27.50	35.00	40.00	45.00	50.00	60.00
Diameter of Flanges.....inches	6½	7½	8¼	9	10	10½
Face to Face, Flanged..... "	10½	11½	12½	13¼	14	14
Size.....inches	5	6	7	8	10	12
Fig. H-1629, Screwed Ends	61.00	75.00	95.00	114.00	190.00	....
No. H-1630, Flanged Ends.....	65.00	80.00	100.00	120.00	200.00	300.00
Diameter of Flanges.....inches	11	12½	14	15	17½	20
Face to Face, Flanged..... "	15¾	17½	19¼	21	24½	28

In sizes 10 inches and smaller, screwed end valves will be furnished unless otherwise specified.

These valves may be used in either horizontal or vertical positions.

We do not recommend the use of screwed end valves above 6 inches.

For names of parts, see page 448.

Templates for drilling, see pages 224, 225.

Price list for drilling, see page 430.

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EXTRA HEAVY HYDRAULIC IRON BODY GATE VALVES

OUTSIDE SCREW AND YOKE

The use of Iron Body Gate Valves is becoming more and more extensive in connection with hydraulic systems, and it is to meet this growing demand that these valves are submitted.

They are of the Wedge Gate Pattern, and the bodies are laid out with long radius curves so that they combine a pleasing appearance with maximum strength. The construction is such that they can be packed under pressure when wide open.

The bodies are made from our special cast iron, having a tensile strength of from 26,000 to 28,000 pounds per square inch.

All brass parts are made of a special mixture which is admirably adapted to the hard service of this class of valves.

The stems are ordinarily made of steel, but brass stems can be furnished at a special price.

We can also furnish these valves in the Non-Rising Stem Pattern, when desired.

RECOMMENDATION

Each valve is thoroughly tested at 2,000 pounds, cold water pressure, and are recommended for water working pressures up to 800 pounds.

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EXTRA HEAVY HYDRAULIC IRON BODY GATE VALVES

Wedge Gate Pattern. Outside Screw and Yoke. Brass Mounted
For Water Working Pressures up to 800 Pounds
Tested to 2,000 Pounds Cold Water Pressure per Square Inch

Fig. H-1632

Outside Screw and Yoke

Size ..... inches	1½	2	2½	3	4	5
No. H-1631, Screwed ..... each	24.00	27.00	45.00	60.00	80.00	110.00
Fig. H-1632, Flanged ..... "	24.00	27.00	45.00	60.00	80.00	110.00
Face to Face, Flanged ..... inches	10	11½	13½	14½	16½	18½
Diameter of Flanges ..... "	6½	7½	8¾	10	11½	13½

Size ..... inches	6	7	8	10	12	.....
No. H-1631, Screwed ..... each	170.00	.....	.....	.....	.....	.....
Fig. H-1632, Flanged ..... "	170.00	200.00	225.00	325.00	500.00	.....
No. H-1633, Flanged, with By-Pass ..... "	190.00	225.00	250.00	375.00	575.00	.....
Face to Face, Flanged ..... inches	20	21½	23	26½	29½	.....
Diameter of Flanges ..... "	15	16	17	21	23½	.....
Size of By-Pass ..... "	1¼	1¼	1½	1½	2	.....

In sizes 6 inches and smaller, screwed end valves will be furnished unless otherwise specified. Ordinarily furnished with steel stems. Extra charge for brass stems. Flanged valves are regularly furnished with both ends male unless otherwise specified. Non-rising stem valves can also be furnished when desired at prices which will be quoted on application. These valves are so constructed as to admit of being packed under pressure when wide open. The position of the outside screw indicates whether the valve is open, partially open or closed. We do not recommend the use of screwed end valves above six inches. We recommend the use of by-pass on valves six inches and larger. Table of dimensions, see pages 454, 455. Templates for drilling, see pages 454, 455. Price list for drilling, see page 456.

EXTRA HEAVY HYDRAULIC IRON BODY GATE VALVES

Wedge Gate Pattern

For Water Working Pressures up to 800 Pounds

Fig. H-1634

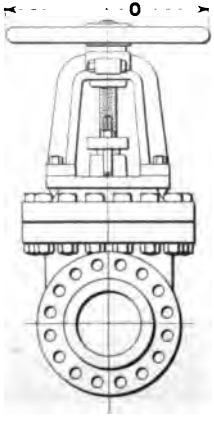


Fig. H-1635

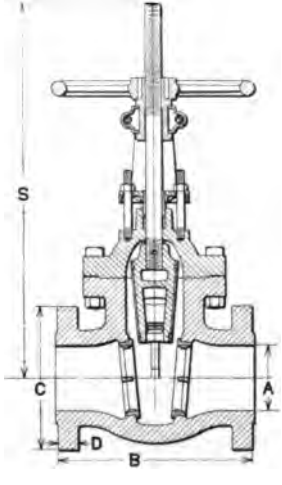
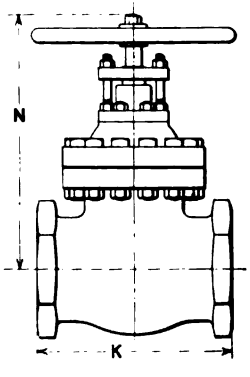


Fig. H-1636



For dimensions, see opposite page.

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EXTRA HEAVY HYDRAULIC IRON BODY GATE VALVES

Wedge Gate Pattern

TABLE OF DIMENSIONS

A—Size.....inches	1½	2	2½	3	4	5	6	7	8	10	12
B—Face to Face, Flanged.....inches	10	11½	13½	14½	16½	18½	20	21½	23	26½	29½
C—Diameter of Flanges..... "	6½	7½	8¾	10	11½	13½	15	16	17	21	23½
D—Thickness of Flanges..... "	1⅛	1¼	1⅜	1 15/16	1 11/16	1⅞	2 1/16	2¼	2⅜	2¾	3⅛
K—End to End, Screwed..... "	10	11½	13½	14½	16½	18½	20	....	....	....	....
N—Center to Top of Non-Rising Stem..... "	12⅜	14¼	16	17⅞	20½	23¼	24¾	28¼	29½	34⅝	40⅛
S—Center to Top of Rising Stem, Open..... "	15⅛	18	20½	22⅞	27⅜	31¾	35¾	41¼	45¼	53½	62¼
O—Diameter of Wheel..... "	7½	10	12	14	15	18	20	22	24	27	30
Center of Run to Outside of By-Pass "	....	....	....	....	....	....	14⅜	15	17⅜	18⅝	21½
Size of By-Pass..... "	....	....	....	....	....	....	1¼	1¼	1½	1½	2
Diameter of Male..... "	3⅛	3⅝	4⅛	5	6	7¼	8⅜	9⅜	10⅝	12¾	15¼
Height of Male..... "	3/16	3/16	3/16	3/16	3/16	3/16	3/16	¼	¼	¼	¼
Diameter of Female..... "	3 3/16	3 11/16	4 3/16	5 1/16	6 1/16	7 5/16	8 7/16	9 7/16	10 11/16	12 13/16	15 5/16
Depth of Female..... "	⅛	⅛	⅛	⅛	⅛	⅛	⅛	3/16	3/16	3/16	3/16
Diameter of Bolt Circle..... "	5	5¾	6½	8	9⅜	11	12½	13⅜	14⅛	17¾	20⅜
Number of Bolts..... "	4	4	8	8	8	12	12	16	16	20	20
Size of Bolts..... "	⅝	¾	¾	¾	1	1	1⅛	1⅛	1¼	1¼	1⅜
Diameter of Bolt Hole..... "	¾	⅞	⅞	⅞	1⅛	1⅛	1¼	1¼	1⅜	1⅜	1½
Length of Bolts..... "	3¼	3¾	4	4¼	4¾	5¼	5¾	6	6½	7¼	8

The flanges of these valves are drilled in multiples of four so that they may be made to face any quarter, and holes straddle center line.

The length, center to face and face to face of male, female, tongued or grooved extra heavy hydraulic flanged valves are the same as plain faced, the measurements being from face of flange and not from tongue or recess.

Price list for drilling, see page 456.

National Tube Co. NTC Pittsburgh, Pa., U.S.A.

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PRICE LIST FOR DRILLING

EXTRA HEAVY HYDRAULIC FLANGED VALVES

Size Inches	Price Each
1½	.80
2	1.00
2½	1.10
3	1.20
4	1.30
5	2.25
6	3.00
7	5.00
8	6.00
10	8.00
12	9.00

Templates for drilling and dimensions of special facing, see pages 454, 455.

Extra prices for special facing, spot facing bolt holes, bolting on, etc., see page 228.

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WROUGHT TUBE RADIATORS

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WROUGHT TUBE RADIATORS

The Wrought Tube Radiator has several intrinsic points of excellence which can never be attained by its aggressive competitor, the cast iron radiator.

First, it is much more compact for the same amount of heating surface, and consequently takes up less of the valuable space of an office building.

Second, the heating surface is more effective than that of the cast iron radiator.

Third, the method of construction allows a much greater variety of shapes and styles, thus making it possible to supply a radiator which fits the place it is to occupy.

Fourth, it is much stronger than a cast iron radiator and can be used for live steam with pressures up to 100 pounds.

The radiators are artistic in design, and are made in the style and sizes shown on the succeeding pages.

The table on page 465 shows the amount of effective heating surface contained in radiators of different heights.

We also make a great many staggered tube radiators for indirect heating work.

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STANDARD VERTICAL TUBE RADIATORS

Rectangular

One Row of Tubes

For Steam Pressures up to 100 Pounds

Fig. H-1700

Number of Rows	1	1	1	1	1	1	1	1	1
Tubes in Each Row	6	8	10	12	16	20	24	28	32
Square Feet Heating Surface	6	8	10	12	16	20	24	28	32
Height ..... inches	34 1/4	34 1/4	34 1/4	34 1/4	34 1/4	34 1/4	34 1/4	34 1/4	34 1/4
Length ..... "	15 1/2	19 3/4	24	28 1/4	36 3/4	45 1/4	53 3/4	62 1/4	70 3/4
Width ..... "	6	6	6	6	6	6	6	6	6
Size Inlet for Single Pipe "	1	1	1	1	1	1	1	1	1
Size Inlet for Double Pipe "	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
Size Outlet for Double Pipe "	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4

Prices on application.

Single row radiators are made in above lengths only.

Quotations, when made, are for radiators unpainted, with iron tops and without valves.

We can furnish above radiators 10 inch to 52 inch in height at special prices.

In ordering, give full particulars as to tapping, and be careful to indicate whether radiators are desired for single pipe system or double pipe system; if for double pipe system, state whether openings should be at same end or opposite ends.

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STANDARD VERTICAL TUBE RADIATORS

Rectangular
Two Rows of Tubes
For Steam Pressures up to 100 Pounds

Fig. H-1701

Number of Rows		2	2	2	2	2	2	2	2	2	2
Tubes in Each Row		4	6	8	10	12	16	20	24	28	32
Square Feet Heating Surface		8	12	16	20	24	32	40	48	56	64
Height	inches	34½	34½	34½	34½	34½	34½	34½	34½	34½	34½
Length	"	11½	15½	19½	24	28½	36½	45½	53½	62½	70½
Width	"	6½	6½	6½	6½	6½	6½	6½	6½	6½	6½
Size of Inlet for Single Pipe	"	1	1	1	1	1	1	1½	1½	1½	1½
Size of Inlet for Double Pipe	"	¾	¾	¾	¾	¾	¾	1	1	1	1
Size of Outlet for Double Pipe	"	¾	¾	¾	¾	¾	¾	¾	¾	¾	¾
Length of Marble Top	"	10	14½	18½	23	27½	35½	44½	53	61½	68½
Width of Marble Top	"	5½	5½	5½	5½	5½	5½	5½	5½	5½	5½

Prices on application.

Double row radiators are made in above lengths only.

Distance between centers of feed and return openings, 3½ inches.

Quotations, when made, are for radiators unpainted, with iron tops and without valves.

We can furnish above radiators, 10 inches to 52 inches in height, at special prices.

In ordering, give full particulars as to tapping and be careful to specify if for single or double pipe system; if for latter, whether openings are to be at same or opposite ends.

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STANDARD VERTICAL TUBE RADIATORS

Rectangular
Three Rows of Tubes
For Steam Pressures up to 100 Pounds

Fig. H-1702

Number of Rows	3	3	3	3	3	3	3	3	3	3	3	3
Tubes in Each Row	4	6	8	10	12	14	16	18	20	24	28	32
Square Feet Heating Surface	12	18	24	30	36	42	48	54	60	72	84	96
Height inches	34¼	34¼	34¼	34¼	34¼	34¼	34¼	34¼	34¼	34¼	34¼	34¼
Length "	11¼	15½	19¾	24	28¼	32½	36¾	39	45¼	53¾	62¼	70¾
Width "	8½	8½	8½	8½	8½	8½	8½	8½	8½	8½	8½	8½
Size of Inlet for Single Pipe "	1	1	1	1	1	1¼	1¼	1¼	1¼	1¼	1¼	1¼
Size of Inlet for Double Pipe "	¾	¾	¾	¾	¾	1	1	1	1	1	1¼	1¼
Size of Outlet for Double Pipe "	½	½	½	½	½	¾	¾	¾	¾	¾	¾	¾
Length of Marble Top "	10	14¼	18¾	23	27½	31½	35¾	40	44½	53	61½	68¾
Width of Marble Top "	8	8	8	8	8	8	8	8	8	8	8	8

Prices on application.

Three row radiators are made in above lengths only.

Distance between centers of feed and return openings, 4¾ inches.

Quotations, when made, are for radiators unpainted, with iron tops and without valves.

We can furnish above radiators, 10 inches to 52 inches in height, at special prices.

In ordering, give full particulars as to tapping and be careful to specify if for single or double pipe system; if for latter, whether openings are to be at same or opposite ends.

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STANDARD VERTICAL TUBE RADIATORS

Rectangular
Four Rows of Tubes
For Steam Pressures up to 100 Pounds

Fig. H-1703

Number of Rows		4	4	4	4	4	4	4	4	4	4	4
Tubes in each Row		10	12	14	16	18	20	22	24	26	28	30
Square Feet Heating Surface		40	48	56	64	72	80	88	96	104	112	120
Height	inches	34½	34½	34½	34½	34½	34½	34½	34½	34½	34½	34½
Length	"	24	28½	32½	36½	39	45½	49½	53½	58	62½	66½
Width	"	11	11	11	11	11	11	11	11	11	11	11
Size of Inlet for Single Pipe	"	1¼	1¼	1¼	1¼	1¼	1¼	1¼	1¼	2	2	2
Size of Inlet for Double Pipe	"	1	1	1	1	1	1¼	1¼	1¼	1¼	1¼	1¼
Size of Outlet for Double Pipe	"	¾	¾	¾	¾	¾	¾	¾	¾	¾	¾	¾
Length of Marble Top	"	23	27½	31½	35¾	40	44½	48¾	53	57	61½	66
Width of Marble Top	"	10	10	10	10	10	10	10	10	10	10	10

Prices on application.

Four row radiators are made in above lengths only.

Distance between centers of feed and return openings is 4⅜ inches.

Quotations, when made, are for radiators unpainted, with iron tops and without valves.

We can furnish above radiators 10 inches to 52 inches in height at special prices.

In ordering give full particulars as to tapping, and be careful to specify if for single or double pipe system; if for latter, whether openings are to be at same or opposite ends.

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STANDARD VERTICAL TUBE RADIATORS
RECTANGULAR

Six Rows of Tubes
For Steam Pressures up to 100 Pounds

Fig. H-1704

Number of Rows		6	6	6	6
Tubes in each Row		22	24	26	28
Square Feet Heating Surface		132	144	156	168
Height	inches	34¼	34¼	34¼	34¼
Length	"	49¼	52½	57¾	62
Width	"	15½	15½	15½	15½
Size of Inlet for Single Pipe	"	2	2	2	2
Size of Inlet for Double Pipe	"	1¼	1¼	1¼	1¼
Size of Outlet for Double Pipe	"	1	1	1	1
Length of Marbe Top		48¾	53	57	61½
Width of Marblle Top		14½	14½	14½	14½

Prices on application.
Six row radiators are made in above lengths only.
Distance between centers of feed and return openings is 4¾ inches.
Quotations when made, are for radiators unpainted, with iron tops and without valves.
We can furnish above radiators 10 inches to 52 inches in height, at special prices.
In ordering give full particulars as to tapping, and be careful to specify if for single or double pipe system; if for latter, whether openings are to be at same or opposite ends.

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STANDARD VERTICAL TUBE RADIATORS

Circular

For Steam Pressures up to 100 Pounds

Fig. H-1705

Number of Radiator	1	2	3	4	5
Number of Tubes	18	36	54	84	120
Square Feet Heating Surface	18	36	54	84	120
Height ..... inches	34¼	34¼	34¼	34¼	34¼
Outside Diameter ..... "	13	17	21	25¼	29
Size of Inlet for Single Pipe ..... "	1	1	1¼	1½	2
Size of Inlet for Double Pipe ..... "	¾	¾	1	1¼	1¼
Size of Outlet for Double Pipe ..... "	¾	¾	¾	¾	¾

Prices on application.

We only make these radiators with number of tubes as specified above, but can furnish them from 10 inches to 52 inches in height at special prices.

Quotations, when made, are for radiators unpainted, with iron tops and without valves.

In ordering give full particulars as to tapping and be careful to specify if for single or double pipe system, if for latter, whether openings are to be at same or opposite ends.

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TABLE FOR COMPUTING RADIATION

Height of Radiator Inches	Square Feet of Heating Surface in One Tube of 1-inch Pipe	No. Tubes to 1 Square Foot Heating Surface	Height of Radiator Inches	Square Feet of Heating Surface in One Tube of 1-inch Pipe	No. Tubes to 1 Square Foot Heating Surface
10	.287	3.484	32	.939	1.065
11	.303	3.300	33	.969	1.032
12	.330	3.030	34	1.000	1.000
13	.360	2.778	35	1.030	.971
14	.390	2.564	36	1.060	.943
15	.424	2.358	37	1.090	.917
16	.450	2.222	38	1.120	.893
17	.485	2.062	39	1.151	.869
18	.515	1.942	40	1.181	.847
19	.540	1.852	41	1.212	.825
20	.575	1.739	42	1.242	.805
21	.606	1.650	43	1.272	.786
22	.636	1.572	44	1.303	.767
23	.666	1.502	45	1.333	.750
24	.690	1.449	46	1.363	.734
25	.727	1.376	47	1.393	.718
26	.757	1.321	48	1.424	.702
27	.787	1 271	49	1.454	.688
28	.818	1.222	50	1.484	.674
29	.848	1.179	51	1.515	.660
30	.879	1.138	52	1.545	.647
31	.909	1.100	....	....	....

Wrought tube radiators are made with 1-inch tubes.

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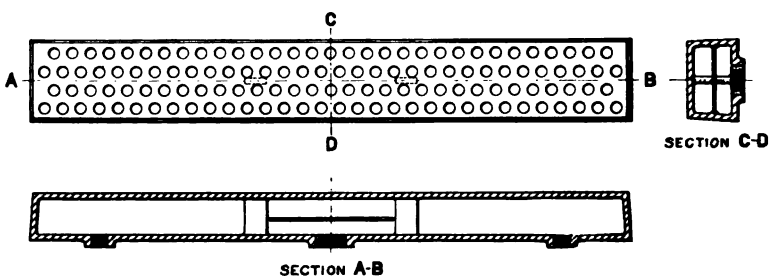
STAGGERED TUBE RADIATORS

Staggered Tube Radiators are specifically employed for indirect heating service, and the heating and ventilating of buildings requiring a large circulation of freshly warmed air. This type of radiator is particularly valuable in massed coil work, and where the fan system of heating and ventilating is used. A number of these radiators are placed in the fan room and so positioned between the cold-air inlet and the fan, that when the fan is started, cold air is drawn through the passages between the tubes of the radiators. The tubes are "staggered," that is, they are arranged in alternating rows, the second row of tubes being placed directly opposite the spaces between the tubes comprising the first row. This zig-zag or staggered arrangement of tubes causes the cold air to follow an indirect path through the heat zone of the radiator, deflecting the air from one tube to another, thus insuring a more positive contact between the air and the heated surface of the tubing with its attendant increase in efficiency.

Referring to the accompanying plan view of the baffle plate radiator base, the steam is fed into the center of the base from underneath. The design of the baffle plate base casting is such that each tube receives an equal proportion of the deflected steam, resulting in uniform radiation throughout the radiator.



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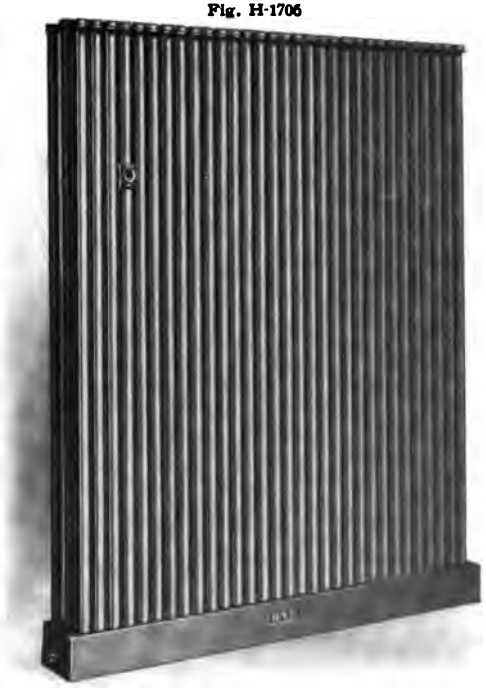
STAGGERED TUBE RADIATORS

For Indirect Heating

Fig. H-1706



Tubes Wide	Total Number Tubes	Size Pipe Inches	Length Pipe Feet	Square Feet Radiation	Length Over All Inches	Width Over All Inches	Height Over All Inches	Tapping
4	126	1	6	285	69¼	8¾	79	3 x 1½
4	126	1	6½	309	69¼	8¾	85	3 x 1½
4	96	1	6	230	52	8¾	79	3 x 1½
2	40	1¼	6	140	62	6	78	2 x 1½

Prices on application.

These Radiators can be made with any length of pipe desired below 7 feet, thus varying the number of square feet of heating surface in each.

All are made without tops or legs. They are made with wrought straps of 2½ x ¼ stock, bolted at the top.

Radiators 4 tubes wide are tapped in bottom.

Radiators 2 tubes wide are tapped opposite ends.

Staggered tube radiators are tapped 3 inches in center of bottom of base and 1½ inch on either side near ends of base in bottom.

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BRACKET COILS

Fig. H-1707

Made of 1-inch Pipe

12 PIPES HIGH

Length ..... feet	8	7	6	5½	5	4½	4	3½	3	2½
Per Foot, 2 Pipes Wide..	.29	.30	.31	.31	.32	.34	.38	.41	.45	.49
Per Foot, 1 Pipe Wide...	.30	.30	.33	.33	.34	.36	.40	.44	.48	.52

10 PIPES HIGH

Length ..... feet	8	7	6	5½	5	4½	4	3½	3	2½
Per Foot, 2 Pipes Wide..	.29	.30	.31	.31	.32	.34	.38	.42	.46	.50
Per Foot, 1 Pipe Wide...	.30	.31	.33	.35	.37	.40	.43	.45	.48	.53

8 PIPES HIGH

Length ..... feet	8	7	6	5½	5	4½	4	3½	3	2½
Per Foot, 2 Pipes Wide..	.29	.30	.32	.32	.33	.36	.38	.43	.46	.52
Per Foot, 1 Pipe Wide...	.30	.31	.33	.33	.36	.40	.43	.46	.49	.55

6 PIPES HIGH

Length ..... feet	8	7	6	5½	5	4½	4	3½	3	2½
Per Foot, 2 Pipes Wide..	.30	.32	.34	.34	.35	.36	.38	.44	.48	.53
Per Foot, 1 Pipe Wide...	.31	.33	.35	.35	.37	.41	.44	.47	.51	.58

The above prices are based on coils made of whole pipe without couplings.

COIL STANDS, SLATS, ETC.

Ornamental Coil Stand (Light Pattern)
Ornamental Coil Stand (Heavy Pattern)
Ornamental Coil Stand for Wall Coils
Slats for Plain and Ornamental Coils
Straps for Plain Box Coils
Wrought-Iron Coil Rods
Wrought-Iron Bracket Coil Rods

} Market Rates

NOTE.— All our coils before leaving the shop are thoroughly tested, and are perfectly tight. We can not guarantee them against the risk of transportation.

Quotations will be made on application.

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PLAIN BOX COILS

Fig. H-1708

Made of 1-inch Pipe

PRICE PER LINEAL FOOT

Length Feet	12 Pipes High — Number Pipes Wide					10 Pipes High — Number Pipes Wide				
	3	4	6	8	10	3	4	6	8	10
8	.30	.30	.30	.30	.30	.30	.31	.30	.30	.30
7	.31	.31	.31	.31	.31	.31	.33	.32	.32	.31
6	.32	.33	.32	.32	.33	.32	.34	.37	.33	.34
5½	.33	.34	.33	.33	.33	.33	.36	.37	.34	.35
5	.34	.35	.34	.34	.35	.35	.38	.37	.35	.36
4½	.36	.37	.36	.36	.36	.37	.40	.38	.37	.37
4	.37	.41	.37	.37	.38	.38	.42	.39	.39	.39
3½	.42	.43	.41	.41	.42	.45	.47	.43	.43	.45
3	.45	.47	.44	.44	.45	.48	.51	.47	.47	.47
2½	.49	.52	.49	.49	.50	.54	.57	.52	.52	.52

Length Feet	8 Pipes High — Number Pipes Wide					6 Pipes High — Number Pipes Wide				
	3	4	6	8	10	3	4	6	8	10
8	.30	.32	.31	.32	.32	.31	.35	.34	.34	.34
7	.31	.34	.33	.33	.33	.32	.37	.36	.36	.36
6	.33	.36	.35	.36	.36	.34	.39	.39	.38	.38
5½	.33	.37	.37	.36	.36	.35	.40	.39	.39	.39
5	.34	.39	.38	.37	.38	.36	.41	.41	.41	.41
4½	.35	.40	.40	.39	.40	.37	.44	.43	.43	.43
4	.37	.42	.42	.41	.42	.40	.46	.45	.45	.46
3½	.44	.48	.46	.46	.47	.46	.54	.51	.51	.52
3	.47	.53	.50	.50	.51	.50	.59	.56	.56	.57
2½	.52	.59	.56	.56	.57	.55	.66	.63	.63	.60

Prices are based on coils made of whole pipe without couplings.

NOTE.—All our coils before leaving the shop are thoroughly tested and are perfectly tight. We cannot guarantee them against the risk of transportation.

Quotations will be made on application.

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ORNAMENTAL BOX COILS

Fig H-1709
Made of 1-inch Pipe

PRICE PER LINEAL FOOT

Length Feet	12 Pipes High					10 Pipes High				
	Number Pipes Wide					Number Pipes Wide				
	3	4	6	8	10	3	4	6	8	10
8	.30	.31	.31	.31	.31	.31	.32	.31	.31	.31
7	.32	.32	.32	.32	.32	.32	.34	.33	.33	.33
6	.33	.34	.33	.33	.34	.34	.36	.39	.34	.35
5½	.34	.35	.34	.34	.35	.35	.38	.39	.35	.36
5	.35	.36	.35	.35	.36	.36	.39	.39	.36	.37
4½	.37	.38	.37	.37	.37	.38	.41	.40	.38	.38
4	.38	.42	.39	.38	.39	.40	.44	.41	.40	.40
3½	.44	45	.42	.42	.43	.47	.49	.44	.44	.46
3	.48	.48	.45	.48	.46	.51	.53	.48	.48	.49
2½	.53	.54	.50	.50	.51	.57	.60	.52	.53	.54

Length Feet	8 Pipes High					6 Pipes High				
	Number Pipes Wide					Number Pipes Wide				
	3	4	6	8	10	3	4	6	8	10
8	.31	.34	.33	.32	.33	.33	.36	.35	.35	.35
7	.33	.35	.34	.34	.34	.34	.38	.37	.37	.38
6	.34	.38	.36	.37	.37	.36	.41	.40	.39	.40
5½	.35	.38	.39	.37	.37	.37	.42	.41	.40	.41
5	.36	.40	.39	.38	.39	.39	.44	.42	.42	.42
4½	.37	.42	.41	.40	.41	.40	.46	.45	.45	.45
4	.39	.44	.43	.43	.43	.44	.49	.47	.47	.48
3½	.47	.51	.48	.48	.49	.50	.57	.54	.53	.54
3	.51	.55	.52	.52	.53	.54	.63	.59	.59	.60
2½	.56	.62	.58	.58	.60	.61	.70	.66	.66	.63

Prices are based on coils made of whole pipe without couplings.

NOTE.—All our coils before leaving the shop are thoroughly tested and are perfectly tight. We cannot guarantee them against the risk of transportation.

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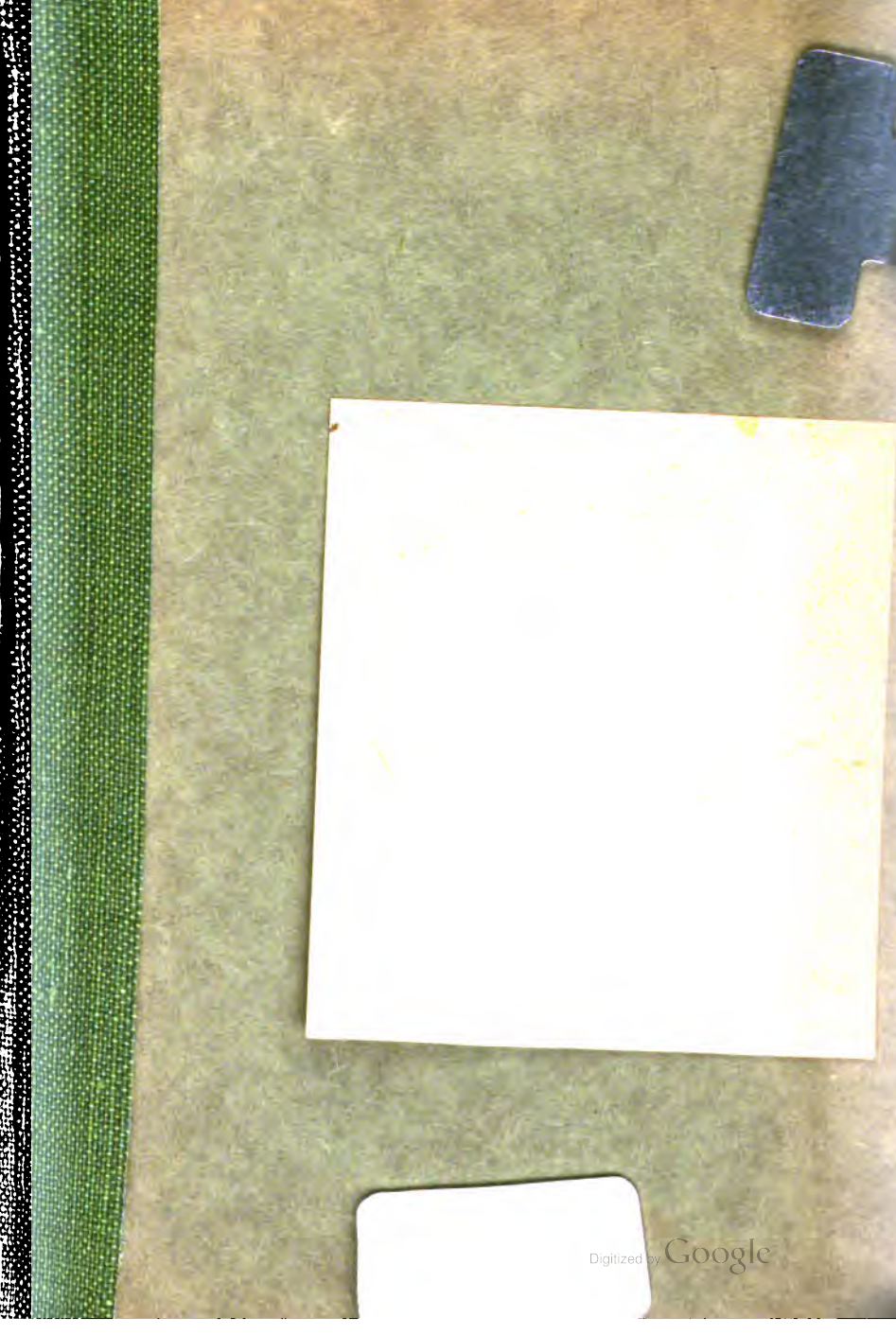
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